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THE catalogue of the Massachusetts Institute of Technology for the current year shows thirty-three students of architecture, of whom fifteen follow the regular under-graduate course of the school, and eighteen are special architectural students. The most popular courses, as far as may be judged from the number of students set down to them, are those in civil engineering, mechanical engineering, mining engineering, architecture, and practical design. The respective numbers of these students are 41, 34, 25, 33, and 47, out of a total of 293. We notice that the graduate students, that is, those who have already taken a degree in colleges elsewhere or at the Institute itself, are divided mainly between the courses in architecture and mechanical engineering; eight out of the twenty-two being students of the first, and nine of the second. These numbers compared with the whole numbers in their respective courses are nine to thirty-four, and eight to thirty-three. It is not safe to generalize freely from the record of a single institution; but these numbers are some indication of what is proved abundantly in other ways, — that in these two professions the number is greatly increasing of those who secure the benefit of what is called a liberal education before their professional training. Desirable as this is in any profession, there is scarcely any in which it is so important as in architecture, — scarcely any in which the superior insight, the keenness and delicacy of perception, which a genuine culture gives, tell so directly upon its work; scarcely any to which the various interests of cultivated men, as distinguished from the merely intellectual, are so closely allied. The physician or the lawyer may attain commanding success in his profession with neglect of culture: the architect cannot; and on the whole, the best means that is provided for laying the foundation of culture is a college training.

THE new course of practical mechanism at the Institute has begun with twenty-two students. This, which is arranged as a two-years course, is meant for "those who wish to become master-mechanics rather than engineers, and especially for the large class of pupils to whom such a systematic training will prove a valuable foundation for further engineering or other scientific study." The workshops are not yet in full working order, the course having only been undertaken this year; but a look at what is already doing would probably astonish those who know the progress which learners make in ordinary workshops. We have seen specimens of hand-work in metal executed by new students after only a few weeks' practice, that an average apprentice would hardly equal at the end of two or three years of service. The result is surprising, but the reason is clear. Few people consider the difference in opportunity between the learner who is put into a shop where the carrying forward of the work is the only thing considered, where he is kept only at such rough work as the economy of the shop leaves in his hands, with no one to urge him forward, or select work with a view to his advantage, or spend time in instructing him, — and the learner in a school where every thing is planned for his special progress, and a skilled expert watches him constantly, correcting his errors, showing him at every turn how his work may be best handled, and teaching him carefully the hundred tricks of his trade which he would else only acquire by slow imbibition. It is a great pity that in these times when everybody is complaining, and justly, of the insufficient training of mechanics and the difficulty of getting good workmen, the different mechanical trades do not take the hint to establish schools for the training of their workmen, instead of devoting all their energies, as the trades-unions seem to do, to the encouragement of strikes, to the discouragement of special proficiency, and to lessening the ratio between work and wages.

OF strikes, the most vexatious that has come under our notice lately is that of the engineers of the Boston and Maine Railroad. This strike, which has been expected for some time in consequence of a disagreement concerning wages between the engineers and the company, was undertaken with due warning, without any underhand action, and has been maintained without recourse to violence. Nevertheless, with these reservations it may be said that the thing was deliberately managed so as to be not only as effective, but as annoying as possible. The engineers, acting under the orders of the Brotherhood of Locomotive Engineers, failing to carry their point by the interference of the president of the Brotherhood, gave notice that if their demands were not agreed to at a time which they fixed, they would strike. Accordingly they did strike simultaneously all along the road at four o'clock in the afternoon, hauling their fires, and leaving their engines on the track wherever they happened to be. No one doubts the right of men who are employed by the day to resign their work on any day, nor of any body of them to agree among themselves to give up their work on the same day; and so the engineers had a right to stop work all together at the end of any day's work that they chose. But it was a great wrong and a great meanness withal to do it in the way this was done; for by stopping in the middle of the afternoon, at the busiest point of the day, they did not make their strike any more efficient, but simply inflicted a great deal of unnecessary and to them unproductive annoyance. And the most annoyance was inflicted not upon the railroad company, but upon some thousands of passengers who were in no wise concerned in their quarrel, and against whom they had no grudge, but who nevertheless were interfered with in their business, and kept away from their homes to their extreme inconvenience, because of the refusal of the engineers to fulfil an implied contract.

WE say an implied contract because, morally at least, the man who being paid by the day begins a day's work in the morning undertakes an obligation to finish it, and has no right to withdraw until the end of the day; and we are persuaded that such an implied agreement could be maintained in law, and that a man who quits his work in the course of the day to the prejudice of his employer could be held liable for damages on account of the injury he does. But when a man who is intrusted with a piece of property, a tool worth several thousands of dollars, abandons it in the middle of the highway instead of returning it to the place where it is kept, there can be no doubt that he commits a disgraceful breach of trust, and that he ought to be made to pay for it. The doings of locomotive engineers as such do not concern us, but the question of strikes does, since these are phenomena which unluckily occur in all trades. We question the right of no man and of no body of men to demand whatever wages they can get for their work. The right of striking is like the right of revolution, and the exercise of it is justifiable just about as often; but it is a right which he who uses it is bound in decency, and ought to be compelled by law, to use with no unnecessary injury to his neighbor: yet it is the settled policy in trades-unions to inflict in striking as much injury as can be inflicted without resort to criminal violence, if indeed they stop at this point. The evil has gone so far, and the loss occasioned by strikes has become so serious an injury to the community, that they need to be regulated by legislation. The matter is probably not easily dealt with; but it is very desirable, and we do not see why it should be impracticable,

to secure laws by which those who engage in strikes should be held closely liable for any loss or damage occasioned by them beyond that which necessarily results from the stoppage of work at a reasonable time. There would probably be no great satisfaction in enforcing such a liability against the individual workmen who strike; but it would be worth while to enforce it against the unions and brotherhoods which direct and sustain the strikes, and which, being rich enough to support the workmen who are thrown out of work by them, are also rich enough to pay for the unnecessary damage they do.

THE first municipal action in favor of cremation of which we have heard is that of the town of Gotha, where the council, which some time ago legalized cremation, has lately decided to erect a *columbarium*, with provision for the burning of bodies. The plan of the structure provides two wings with a connecting portico, — one of the wings being used as a reception-hall for bodies, and the other for the cremation itself; while the portico, as we understand it, is to be the *columbarium* proper, the wall behind the colonnade carrying the cinerary urns, with memorial tablets, and the like. The apparatus to be used in the burning is that of Dr. Siemens, which we have before described (*American Architect* No. 46, p. 361). A late number of *Engineering* gives illustrations of the prize design for cremation-buildings, accepted by the congress of cremationists held last summer in Dresden, by Herr Lilienthal, an architect of Berlin. This consists of a classical chapel, in the form of the cella of a Greek temple, rising above the surrounding peristyle, which connects on either hand by short wings with round buildings something like Romanesque baptisteries. Beyond these, long porticos which will serve as *columbaria* stretch out on both sides. The bodies are burned in furnaces in a building behind the chapel, and the smoke of the furnaces is carried off in a flue which rises through the middle of a high bell-tower in the rear.

HALF a century ago, as is pretty well known, when Mehemet Ali, the ambitious viceroy of Egypt, presented to Louis Philippe the famous obelisk of Luxor, he also gave one to the English Government, — the sister obelisk to Cleopatra's Needle. The Roman emperors brought many Egyptian obelisks to Rome, and the popes have placed and replaced several of them. The transportation of the obelisk of Luxor to Paris, and setting it up in the *Place de la Concorde*, is one of the noted achievements of Louis Philippe's reign. But the English Government, less accessible to sentiment than Roman emperor, or pope, or French king, left their gift lying in the sands of Alexandria, where it lies to this day. Meanwhile the land on which it lies, passing from hand to hand, has come into possession of a Greek who wishes to build a row of villas upon it. The proprietor, having appealed to the Egyptian Government to have the obstruction removed, was referred to the English Government, to whom it belonged; but the English consul refused on behalf of his government to acknowledge any responsibility for the obelisk. Then the proprietor brought suit against the government of Egypt for damages on account of the incumbrance, but was non-suited. Now the question has arisen again whether the English will carry home their present, with the alternative that if they do not acknowledge and care for it, it will be quarried for building-stone. It cost two millions of francs to put the obelisk of Luxor in the *Place de la Concorde*, but nowadays a shipping firm is found in Alexandria which agrees to set up the English elephant on the Thames Embankment for ten thousand pounds.

THE last number received of the *Builder* contains an illustration of the new Court Theatre at Vienna. This theatre is building on the site of the old Löwelbastei, on the western verge of the old city, and on the Ringstrasse, which, taking the place of the former fortifications, divides the old city from the suburbs. It is from the designs of Semper, who, it will be remembered, built the famous Court Theatre at Dresden, destroyed by fire not long ago, which he is rebuilding, and who also completed or rather extended (for we believe it is not yet completed) the new museum at Berlin, which was begun by Schinkel. The design is grouped according to the general fashion set by the modern French architects, showing a preponderating rectangular mass with pedimented roof, above the stage, against the front of which leans a semicircular mass, under which is the auditorium; and around these two are grouped the remaining parts of the building. The conspicuous parts of the façade are a frontispiece which consists of a tetrastyle of Corinthian pilasters, standing on high pedestals, supporting their entablature and a sculptured attic; and on each side of this a curved wing, concentric with the wall of the auditorium, returning to meet the wings that flank the stage. The arrangement, of which no plan is given, must be very like that of the burned theatre in Dresden; but the design is far from having the same beauty. The frontispiece breaks the fine curve of the corridor around the auditorium, which was so marked a feature of the Dresden theatre, while its slight projection gives it no opportunity of redeeming the inconvenience of the latter in having no room in front of the auditorium for any thing but the corridor. The great order which is continued around the wings, and includes three stories, is stilted on its pedestals, and straddles rather awkwardly over the elaborate architectural composition in two orders that occupies the inter-columniations. Nine openings in the porch and the circular wings give entrance to visitors on foot, while carriage entrances are on the extreme right and left; and separate staircases lead from the corridors to the different galleries. The house seats but two thousand, and is arranged with a *parterre* and four tiers, of which the upper and the middle portions of the third are filled with open seats in the American fashion, the rest being occupied by boxes. The stage is seventy-five feet deep, with a provisional stage behind it thirty-five feet deep, which on occasion may be thrown into one with it. The proscenium opening is forty-three feet, and it contains no boxes. Great pains has been taken to secure the theatre against fire, and allow the escape of the audience in case of alarm. The scene-painting room and scene-docks are in a separate building. Two saloons or *foyers* are provided, one for the first and second tiers, and the other for the third and fourth; and small *salons* are attached to the boxes.

ARCHITECTURAL STUDENTS. — VIII.

SKETCH-BOOKS AND NOTE-BOOKS.

THE American architectural student does not sketch as much as he ought. The effect of the neglect shows in his work as a draughtsman, in a certain stiffness and awkwardness of handling, and a helplessness in rendering his accessories that is much too common. Illustrations in our own pages from time to time are only too clear examples of these faults. A European student has his sketch-book or note-book always at hand, keeping it full of valuable memoranda, keeping his hand in practice and his head stored with material for use. It is very likely that a notion prevails that there is a lack of opportunity for sketching in our country, where architecture is mostly new, and on the whole crude, and our towns lacking in picturesqueness. But if there is such a notion, it is a mistaken one. We do lack the temptation to sketching that the picturesque towns and interesting architecture of Europe afford; but there is always opportunity, though the subjects at hand be not the most stimulating. Though our architecture may fail in *ensemble*, and be rather mixed-up and fantastic in design, in the work of our enterprising men there is always something interesting in the parts, whether the whole be satisfactory or not. Or if the surroundings are especially unfavorable as architecture, they are still available as material for practice. The sun shines on good and bad architecture alike; and nothing is so bad that it will not catch the light or cast a shadow. If the student is not able to fill a row of note-books with valuable subjects, he may at least continually practise his eye and hand in drawing what is before him; and if he does this with care enough, he will certainly learn to do it well. But in all the cities in which he is likely to study, he will, when he looks for it, find material enough which will be instructive as well as practicable. Wherever there is a column with a tolerable base and capital, classic or Gothic, wherever there is an archivolt, a pediment, gable, or cornice, there is a study for him in proportion, foreshortening, light and shade.

Wherever there is a successful feature, — a porch, bay, dormer, or chimney, — there is something which it is worth his while to set down in his note-book.

In all the older towns there is material of value in the buildings of two generations ago. They are almost always interesting in one way or another, and contain detail which, though not the best, has its own merit, and, besides being better than most which is executed nowadays, will give the most useful practice to the student who will draw it. It is fast perishing, and in most cases with no one to make a record of it. Clever cornices, columns, panellings, quaint mouldings and enrichments, old mantlepieces, and stairs with carved posts and twisted balusters, abound in the houses of the last century. By recording carefully what remains of the older work, the student will be in the way of service to the profession, which is beginning to take an interest in it, and will take a greater interest hereafter. He will be giving himself the best training for improving his chances when he is fortunate enough to get an opportunity to travel in countries that are rich in architecture old and new, and where he will need all the dexterity and precision he can have acquired. He cannot spend a short vacation to better advantage than in exploring some country town whose old houses are unspoiled, and making thorough studies of them. He should practise both sketching the general aspect of the things that he finds interesting, and taking exact notes and memoranda from which he can at his leisure make accurate measured plans and detailed drawings. He will find that this is not so easy work as it seems, and probably that after his first visit to any building, his record will be so incomplete that he must return to verify and extend it before he can make his drawings in full. He will be likely also to acquire a wholesome estimate of his own powers. The editor of an illustrated paper knows by wearisome experience how hopeless it is to try to persuade a draughtsman that he cannot draw well; a strenuous wrestle with an old carved chair-back or a carved and twisted newel-post may be more convincing than the most solemn testimony of the elders.

In like manner it is very useful for the student to fill his note-books with scraps of whatever he finds most interesting in professional books or journals. It may seem unnecessary or useless to do this, because the books and the journals are always at hand. But they are not always at hand to him, unless he has a library full of them; and if they were he would find at the moment of need, that he had not time to look them through, or that he did not know just where to look for the thing he wanted; or he would have forgotten that it existed. He will find that the habit of noting down carefully what he meets with will add wonderfully to the clearness of his recollection of it; and that to read and examine with an eye to making notes is an excellent tonic to his digestion of what he reads. He will be able too by this means to classify and arrange his knowledge as only an unusually capable person can do by the aid of his memory alone. His reading or experience will be continually bringing before him points of detail in design or construction, — capitals, floors, chimneys, masonry, bases, cornices, plumbing, trusses, ironwork, graphical constructions, — in such confused succession, that it will be long before he learns to group and compare each class in his mind; but a few sheets of notes in which he has carefully arranged them will clear up their relations more than months of desultory observation. The student who has neglected this sort of work will, if he takes it up, probably be astonished to find how much material the most unpromising surroundings will provide for him, and how much a little method in the arrangement of his notes will add to his understanding of what he has seen, and to the resources he has at command for his work. Besides this, the constant making of careful sketches or even tracings of what comes under his eye will unconsciously familiarize him with a variety of means of rendering and knowledge of effect. He will discover with delight in some sudden emergency that he has resources at command which he did not suspect, and of which he can hardly tell the origin.

The draughtsman's pencil should be always at hand and always in use. He should turn to it for illustration, or to occupy an idle moment, as instinctively as the traditional soldier lays his hand on his sword. The mere habit of constant scribbling is by no means a useless one, provided it is not absolutely aimless scribbling. A skilful violinist once said that if he should omit to practise his scales one day, it would take him a week to get his skill back. The constant use of the pencil or the brush is almost equally indispensable. To be a ready and efficient servant, it should be always in service. An American artist who had spent many years abroad was asked once by a brother artist how he got his astonishing command of his pencil. "I am always drawing," he said: "if I wake in the night, I stick my toes out of bed and draw them." Not only constant but varied practice is necessary. Architectural draughtsmen are too apt to narrow themselves to doing one thing, or else to one way of doing every thing. Many are at sea as soon as their pen leaves the edge of their square or triangle; others seem to be at home only on the side of a building. Some can draw tolerably in one style, and not in another, — Gothic work and not classic, or the reverse. It is not uncommon to see a drawing in which one part is cleverly handled, while the rest is little better than imbecile. Here also there is benefit in the study of our older buildings. The chief characteristic of our present American architecture as a whole is its want of breadth and simplicity in treatment. The same characteristic is noticeable in our drawings, in which repose and "keeping" are often set at defiance. Our older architecture is almost always quiet, broad, and simple. To be sketched appropriately, it must be sketched in a quiet and simple manner. If a habit of drawing it should disgust the student with the restless, broken character of much of our late domestic work, with its countless angles, peaks, dormers, and bays, and lead him to prize the quiet beauty of broad surfaces, harmonious outline, and continuous lines, it would do him no harm.

Whatever is the student's regular habit of work, let him practise a different one, — an opposite one, if he can find it. It will open his eyes to many things which will otherwise pass his notice. If he is addicted to classic work, let him take an opportunity to draw Gothic; it may prevent his falling into dulness and monotony. If, as is more likely, he is used to modern Gothic, let him try classic, and learn the value of peace and quiet. If he commonly uses the brush, let him try the pen: he will acquire a new resource, and his work will probably gain in vivacity. If he is in the habit, as is common, of dashing about with pen and ink, let him practise with the brush, and get command of breadth of effect. Above all, let him sketch carefully, not forgetting what we said in our last article of this series, and what every considerate artist will bear out, — that good sketching consists in leaving out what you can spare, and rendering as carefully as possible what you choose to keep. And let him sketch a-field. There is much that he cannot well learn to draw except by drawing it *in situ*. Study of constructed drawing, though it will correct many of the gross errors into which draughtsmen are apt to fall, and though it cannot safely be neglected, will never put a circle or any curve or group of curves into satisfactory perspective any more than a knowledge of the skeleton will suffice for drawing the figure. It needs the additional correction of the sensitive eye, and the eye is made sensitive mainly by practice from the model. The foreshortening of a base and capital, the curves of an archivolt in perspective, of the cinctures of a shaft or a round tower, will be learned but slowly in office work, if at all. Most of our draughtsmen do not draw them tolerably, because they will not stop to learn their business. Out-of-door drawing and variety of subject will give the student an alert attention and ready memory which will enable him to draw with right decision what his work requires, and to complete his drawings when he needs, with accessories that will not be shamed by any cleverness of his technical work.

STUDIES OF INTERIOR DECORATION.

BY HENRY VAN BRUNT, F. A. I. A.

I.

It is generally assumed that taste is a quality more or less indigenous in every human being; it is supposed to be developed in each one of us in proportion to our opportunities, and according to the accidents of our position and surroundings; it is a quality therefore, which no one, as he values his reputation for good breeding or culture, can permit to be questioned. From this point of view it does not necessarily presuppose study or intellectual exertion to any appreciable extent; yet taste is certainly considered a touchstone of gentility. Now we are born to the periodical neces-

sity of having new things, — new clothes, new furniture, new decorations. These are the opportunities of taste. As for clothes, we are all of us, men and women, spared the necessity of cultivating individual convictions in the matter of taste, by the fact that at any given time certain well-understood forms and styles of dress prevail, — certain fashions, concerning which it may be said that practically there is no disputing. We take what our tailor or our milliner gives us, with but a show of questioning; and our choice, if any, is limited to a few capricious variations all loyal to the fashions of the moment. Thus but little strain is put upon our æsthetic faculties, and our taste remains unquestioned.

The next of the opportunities of taste in the order of frequency are perhaps, interior decorations and furniture; and here also the submission of individuality and independence is well-nigh complete. It is true that the man of taste spends a good deal of time in the shops with upholsterers, carpet and paper dealers, and decorators, making laborious choice. But it remains true that the range of his selection is within the limits, pretty strictly defined, of a prevailing "style," as it is called, which is governed by some mysterious laws, changing we know not why from year to year, so that the interior which his taste furnished and set forth a few years ago is a fundamentally different affair from his interior of to-day. Taste and fashion thus appear to go hand in hand, and there seems to be no disputing about either.

We are continually surrounded by the results of this capricious sovereignty of fashion. Our children grow up in the midst of it. It enters into their lives; and by slow, unconscious processes of amalgamation or absorption, the essential folly and caprice of it perhaps become their habit, and a part of their characters. If therefore, so far as regards the question of interior decoration and furnishing, there be any rational or logical method of developing this scenery of our domestic lives from the mere blankness of a shelter to the fulness and completeness which are essential to the highest civilization, it becomes the part of intelligent creatures to seek for it. If it be possible to create an expression of *perfect fitness* in every room by a sober study of its conditions, and by the considerate use of such resources as we may have at command, the monarch of caprice is dethroned; he has become our slave; and a new field is open for art.

It is a common experience with the architect to find that occupation and use, instead of improving and justifying his architectural forms and dispositions, are a positive injury to them. Rooms which should appear high are so treated by the occupant as to seem low; that which should be light is dark; that which should glow with warmth is gray and cold; that which should invite to repose is noisy with discordant colors and shapes; that which should give a hospitable welcome is formal and forbidding; that which should be elegant is merely costly. None of the opportunities offered by his design for a decorative treatment of especial interest are made use of; and the best results of his artistic intelligence are thus often set at nought, after his own professional responsibility has ceased, either by an unconscious want of sympathy on the part of those for whose comfort and well-being his work has been intended, or by the elaborate interference of that taste which is the handmaid of fashion.

This is true not only of domestic architecture, in which the opportunities for such misuse, with the inevitable results of discord, are more apt to occur, but of more monumental structures, — of churches, theatres, and public halls, — in which at a certain stage of the work the architect too often vanishes into the background, or suffers himself to be supplanted by another whose function is the decoration or completion of the interior. This new official brings to the work a contribution of forms and fancies in accordance with the traditions and conventionalities of his craft, and subservient to certain prevailing fashions which may or may not be in harmony with the intention or sentiment of the building, and which certainly cannot recognize all its capacities for original and especial treatment. However skilful, he can hardly enter into the spirit of the work with the same impulse or inspiration as its originator.

If the exterior design of a house is a matter too far removed from the sympathies of its occupant to be quite understood and appreciated by him, the interior design, that is, the treatment of the walls, floors, and ceilings, is a thing from which he cannot escape; his family and his friends are sensibly or insensibly affected by it; it gives a color and significance to domestic life; it gradually refines or vulgarizes the household, as the case may be. Thus interior decoration would seem to be the point by which architecture can approach most closely to the apprehensions of mankind. It is, or should be, the interpretation and complement of the plans and elevations; it should complete, correct, and explain them; the whole should constitute a unity, a concert of many arts. If this is true of domestic architecture, it is more conspicuously true of all civic and religious monuments. All the details, however minute, which are essential to their complete and perfect adaptation to human use, are a part of the original conception, and should have each its proper and indispensable part to play in the harmony of forms and colors which make up the whole. The interior decoration is that last touch of architecture by which it is brought into sympathy with the occupants.

Therefore, as architecture is a fine art and not an accidental growth, this part of architecture must be governed by certain principles of design, and not by caprice, fashion, or undisciplined taste. It should be understood in the outset, however, that these principles are not of such a character as to produce results mechanically; their function is to establish boundaries, within which imagination and invention may profitably work. The expression of *perfect fitness*, of which, as we have intimated, every room is capable, and within reasonable limits of expense, can be obtained only by the application of such principles.

What are these principles, and how are they to be applied?

We propose to present a series of studies of interior decoration, and by a careful analysis of the motives of composition as they occur in the process of reaching final results in each case, we trust we may be enabled to answer these questions without offensive dogmatism, and in a manner which shall commend itself to common sense.

THE ILLUSTRATIONS.

RESIDENCE AT ROCKFORD, ILL. MR. P. B. WIGHT, ARCHITECT.

(145 Clark Street, Chicago, Ill.)

THE solid block of the house is sixty-six feet and six inches square. Two projections on the sides are ten feet each, and one on the front is the same, making the exterior dimensions, width, eighty-six feet and six inches; depth, seventy-six feet and six inches. The materials of the exterior are, for the basement, white limestone; for the walls, red pressed brick, with bands of black and buff brick. The decorations above the basement, including the cornice, are terra-cotta. The verandas, porches, and lantern in the roof, are wood. The house will be built during the coming season.

INTERIOR. MESSRS. KIMBEL AND CABUS.

(7 and 9 East Twentieth Street, New York, N.Y.)

STORE NO. 31 GREEN STREET, NEW YORK. DESIGNED BY C. W. ROMEYN, ARCHITECT.

(124 West Thirteenth Street, New York, N.Y.)

CORRESPONDENCE.

AN ARCHITECTURAL YEAR.

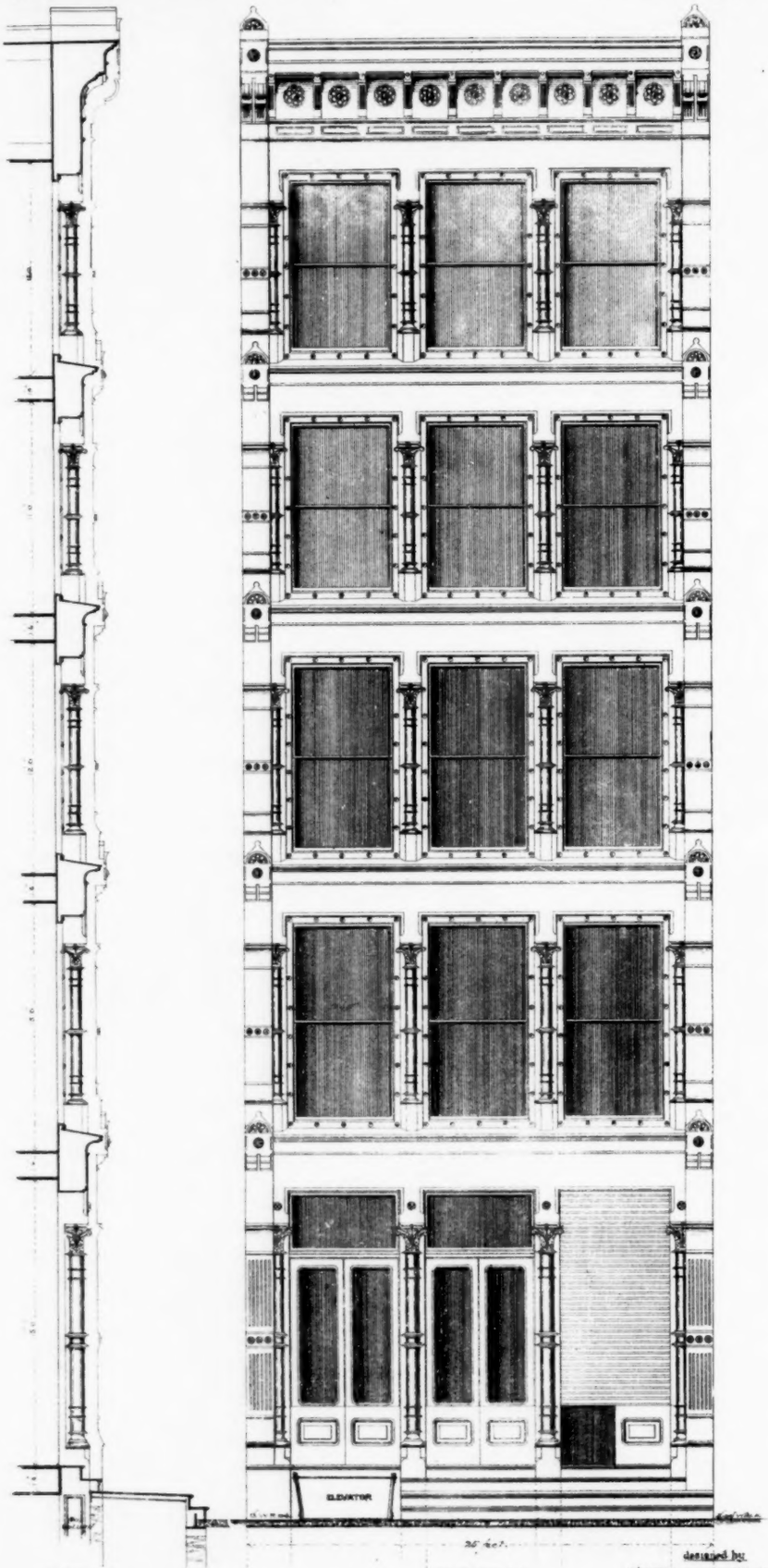
LONDON.

THE year 1876 has passed away without any thing very great in architecture having been accomplished in England. True, there are several important public buildings in progress; they have advanced a stage towards completion; probably one — the Manchester Town Hall — may be said to have been finished during the year, and an instalment of the coming National Gallery in Trafalgar Square has been opened; but none of the others, such as the new Law Courts, the Natural History Museum, etc., are in any thing like a completed state, so that the architectural history of the year, so far as public works are concerned, may be said to be a record of fragments. The Wellington Monument, which was promised to be opened to public inspection in November, is still hidden behind its boarding, and seems likely to remain so for some time longer; but on the other hand, another great national monument has been completed. The statue of the Prince Consort has been placed in position on the Albert Memorial in Hyde Park. Very different in this respect from most of such memorials, the uncovering of this statue was unattended with any public inaugural ceremony, probably because the mighty shrine itself had been waiting in a completed state for its tardy occupant. Now that the Memorial is entirely finished, its effect can be truly judged; and whatever may have been the opinion of the taste which gilded so much of the shrine, surely there can be but one idea as to the propriety of gilding the central statue itself. Any thing more unfortunate in its results could hardly be imagined. That the statue is evidently a fine one (if it could only be seen) there is no doubt; but from the glare and glitter of the burnished metal it really does not very much matter what it is: it is a blaze of gold, and that is all that can be said about it. Whether it is a good likeness, whether the modelling is vigorous or delicate, cannot be told; all detail, all light and shade, all repose, all that quietness wherein should lie its strength, are alike lost in dazzling splendor, distracting the eye, and offending one's ideas of good taste. The delicate, finely cut figures of the white marble podium and the equally fine white marble groups at the angles seemed to demand a similar marble central figure as the key-note of the whole; but this huge gold statue seems to crush them out of existence, and destroys the harmony of the whole work. After all the labor, skill, and money that have been lavished on this the richest of our monuments, he would be a bold critic who would contend that the result is worth the candle, or in any way commensurate with the resources devoted to its attainment.

In the provinces, besides the hall at Manchester just mentioned, perhaps the most remarkable building finished during the year has been the Leicester Municipal Offices, — remarkable, apart from the great merit of the design, as being the first public building of any note erected in the so-called Queen Anne style. Two or three years

STORE Nº 31 GREENE ST. N.Y.

IRON FACADE



SECTION.

ELEVATION.

designed by
G.W. Romeyn Architect.
124 WEST 13TH ST. N.Y.

HELIOTYPE

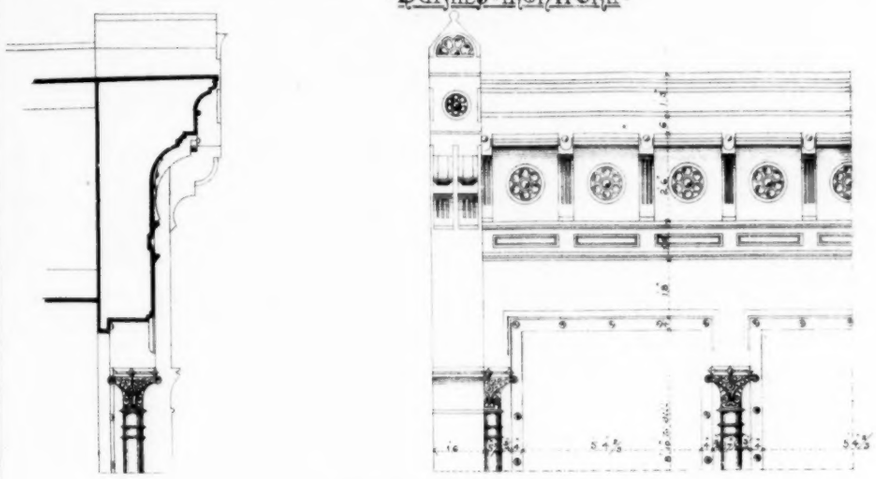
JAMES R. OSGOOD & CO. BOSTON

A. Kimbel & J. Cabus, 124 East 20th St. New York.

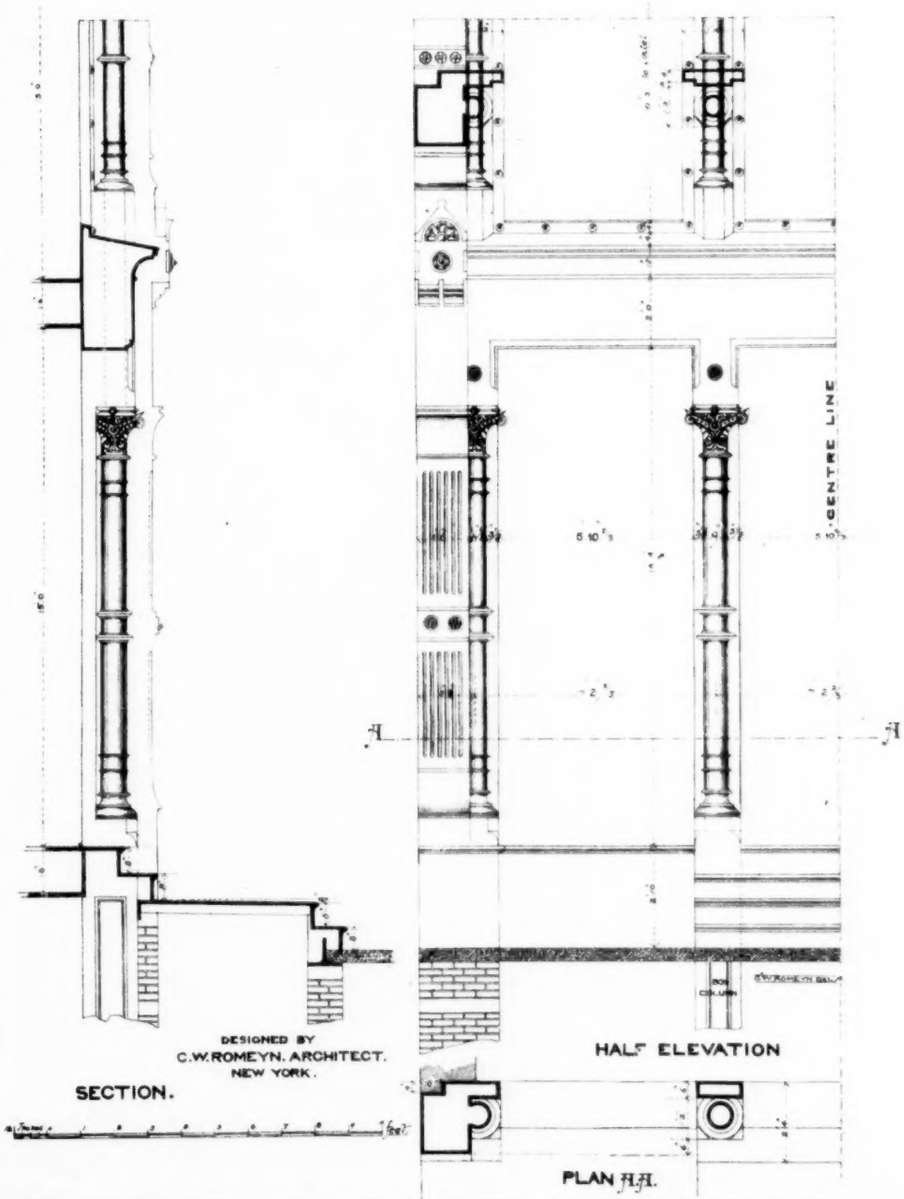
Residence at Rockford Ills
DESIGNED AND DRAWN BY P. B. WIGHT ARCHITECT CHICAGO '76

STORE No. 31 GREENE ST. N.Y.

DETAILS. IRONWORK.



HALF ELEVATION AND SECTION OF CORNICE.



DESIGNED BY
C.W. ROMEYN. ARCHITECT.
NEW YORK.

SECTION.

HALF ELEVATION

PLAN A-A.

TYPE

JAMES R. OSGOOD & CO. BOSTON

ago the advocates of the new style were content to claim for it a special adaptability to private dwellings of all sorts, as the legitimate result of good honest building in brickwork. The year which has closed has seen a striking advance in its development. It was soon found that to have any claim to be a style at all in the true sense of the word, it must be capable of doing all that may be required of it; accordingly we find that the region of public buildings has been invaded with a vigor and success which show that its disciples are thoroughly in earnest, as well as what we may expect in the future. Mr. Bodley led the way with the offices of the London School Board on the Thames Embankment, only to be closely followed by Mr. Hawes in the Leicester building above mentioned, and by Mr. Johnstone in the Middlesborough Assembly Rooms, and again by Mr. Jackson in the new Examination Rooms at Oxford, designed during the year and about to be carried out. These are a great advance from private houses, or the Board Schools of which we have so many in London, even though some of the dwelling-houses, such as the mansion of Kimnel, built by Mr. Nesfield in North Wales, are as large as many public buildings. The latter work, by the way, is probably the largest and most complete of the Queen Anne houses yet built. It comprises a sumptuous suite of reception-rooms, splendid hall and staircase and chapel, as well as a large number of private apartments and extensive offices; all carried out within and without with that thoroughness and power of artistic effect for which Mr. Nesfield's work has always been remarkable, so that it is perhaps not too much to say that this mansion-house is probably the finest piece of so-called Queen Anne work that has been done since the days of the real "Queen Anne" which Wren did at Hampton Court. It is palatial and yet picturesque, quaint without eccentricity, stately without severity, as such an English home ought to be. Like the Leicester Public Offices and the School Board Offices on the Embankment, it is built of red brick with stone wrought work, and in general feeling approaches more nearly a free treatment of Italian than the many quaintly designed houses entirely of brickwork (mouldings, carvings, and dressings) which we are accustomed to associate with the style. Business premises also have come under its influence. Since Mr. Shaw's well-known New Zealand Chambers in the city and the Bank at Charing Cross were built, quite a crop of business houses and shops have appeared in red brick. We hear that the art firm of Messrs. Morris and Co., than whom no men have done more to cultivate and develop the prevailing taste, intend to open a shop and warehouse in Oxford Street, in order that their peculiar works may be brought more under the notice of the general public than could ever be the case at their present place in Queen Square.

In several of the more important competitions also during the year, such as the Nottingham Educational Buildings, the Leeds Public Offices, and the Examination Rooms at Oxford, Queen Anne designs have not only been sent in, but have carried off honors, — in the last-named, the first prize, which is to be built forthwith, and in the first-named, the second prize, — while in the case of the Leeds building only a few Gothic designs were sent in out of twenty-four, results which a few years ago it would have been impossible to obtain. Thus in reviewing the progress of architecture during 1876, the most notable feature in England has been the rapid development of what has now by common consent come to be known as the Queen Anne style; but at the same time it must be admitted that very little of it is like any thing erected during Queen Anne's reign; indeed, in a discussion on a paper by Mr. Birch "On Seventeenth-Century Architecture" at the Institute the other evening, it was suggested that a much more suitable designation would be that of the "Stuart" style, seeing that it is founded on that period of English architecture coming between the Tudor and the Hanoverian eras. Be that as it may, in spite of the unfortunate name which will now probably stick to it, in spite of all manner of abuse and opposition from Goths and Greeks, the style has made more rapid progress during the last twelve months than in any similar period since its revival, if revival it can be called where there is so little to revive. The fact remains that in all departments of building except church work, striking examples are now to be found. It is not to be supposed that the church will escape; indeed, we know of one competition at least, where a remarkably clever Queen Anne design was sent in, and though it was not accepted, the Gothic tradition proving too strong for its chance, it still shows the tendency of the prevailing taste, and that it is only a question of time when we shall have Queen Anne churches, as well as schools and mansions and warehouses. Then again not only in architecture proper, but also in the kindred arts, such as glass-painting, decoration, furniture, metal-work, etc., the age of mediævalism seems past, and a modified Renaissance seems taking its place. Whether all this change is fraught with benefit to architecture as a fine art, yet remains to be seen. It is too early yet to predict whether it is but a passing fashion, or destined to take its place among the great phases of art; here we chronicle only the events as they pass, looking forward to the year upon which we have entered for the continuation of the story.

LIME IN THE EYE. — It is said that a little sweet oil dropped into the eye will counteract the irritation caused by a grain of lime.

PUBLIC BUILDINGS IN ILLINOIS. — THE NEW STATE HOUSE.

CHICAGO.

IN the architectural annals of Illinois, three important buildings now being erected will always occupy a prominent place. These are the State House, the Chicago Custom-House, and the Cook County Court-House also in Chicago. All of them will rank among the largest buildings in the country; and each one is likely to exceed in cost four millions of dollars. Each has an interesting history, like that of most other public buildings, full of lessons both to the profession of architects and to public officials, which, as usual, are likely to be of little benefit to either. They have all received more or less publicity through the columns of the *American Architect:* it is therefore unnecessary to enter into a detailed account of each.

The Illinois State House is now attracting the largest share of public attention. This is occasioned by the appearance of the fifth biennial report of the commissioners and the architect to our biennial legislature which is now in session. This body is now meeting for the first time in the new building, which is still far from completion. But the money is all spent, and it is most likely that the building will have to stand as it now is for a year at least.

Springfield, though the capital of the State, is a place little frequented by travellers, and is without any attractions except the grave of Lincoln, and the brick monument veneered with granite which has been erected to his memory. It is a city of only twenty thousand inhabitants; and, being a place of little business, has not partaken of the spirit of growth which has possessed other cities of the State. The State House is the only building of any note that has been erected there during the last ten years, and has been seen by very few besides those who are called to the capital by business. In such a location it is hardly likely ever to attract much attention as an architectural monument. It is therefore well calculated to astonish those who happen to see it for the first time, by its great size. I do not remember the dimensions, but it has a dome three hundred and sixty-one feet high from the ground line, and said to be seventy-four feet higher than that of the National Capitol.

The designs of J. C. Cochrane, of Chicago, were adopted in 1867 in an open competition, and the building was commenced shortly afterwards. In 1870 Mr. A. H. Piequenard, who had been Mr. Cochrane's partner in Chicago for two years, became a partner in the State-House business, and removed to Springfield, where he resided as acting architect until his death in November, 1876. Mr. Piequenard made important changes in the design of the building after the basement story had been erected. The most noticeable of these were the enlargement of the dome, and the very elaborate inside finish. Before Mr. Piequenard came upon the scene, Mr. Cochrane had prepared the full drawings and specifications for completing the building, which were submitted to an examining committee of the Legislature in 1869, and by them to a committee of experts, consisting of two architects and one master-stonecutter, in order that a detailed estimate of the cost might be made. At this time the basement story had been erected at a cost of nearly half a million dollars. The estimate of the experts for completing the building was a little more than three million dollars, and did not vary materially from that given by the architect. But the commission of experts in addition to submitting estimates, recommended that certain improvements in the character and material of the inside work be made, which would increase the cost by nearly three hundred thousand dollars. This amount however was included in their three million estimate, and should be deducted from that to show what the building would cost as designed. The exact total of the experts' estimate, including the basement story already built, was $3,496,727.53. This was estimated for the mechanical work on the building alone, and did not include the architects' fees, the commissioners' and other salaries, and necessary incidental expenses, the furnishing of the building, the improvement of the extensive grounds, nor fences, gates, and sidewalks, estimated in the aggregate by the commissioners to cost about three hundred thousand dollars. These estimates and omissions bear an important relation to the subsequent history of the building. The legislative committee approved the plans and estimates, and authorized the State-House commissioners to proceed with the erection of the building according to the estimates and recommendations.

In 1870 a new constitution was adopted; and though its main feature was the prohibition of special legislations, its framers had so little faith in the honesty of the Legislature or the State-House commissioners, that they inserted a clause to the effect that the Legislature should not appropriate to be expended on account of the new Capitol grounds and the construction, completion, and furnishing of the State House, an amount exceeding $3,500,000, without submitting the matter to a vote of the people of the State.

The commissioners seem to have accepted the responsibility imposed on them by the constitution, with confidence in their ability to comply with its terms. They expressed this in their reports up te 1875, when all the money had been expended except $800,000. But in the report just presented they say that they made the discovery just after the last appropriation was made, that they were going to fall short of what they needed. Now that the facts must come to light, they admit that they authorized the architects to improve the character of the inside work and *enlarge the dome*,

immediately after being authorized by the legislative committee to go on with the work in 1869. Their excuse is, — and though to architects it is a good one, to financiers it will be considered very weak, — that the improvements recommended by the committee of experts, and which they thought they were bound to carry out, compelled them for consistency's sake to introduce corresponding improvements and embellishments throughout the whole building. It may be well to state here of what the improvements suggested by the experts were to consist. They were these: "We also recommend that the floors of the rotunda and the halls of the basements be of marble, instead of Joliet flagging; also the hall floors of the second and third stories to be of marble instead of wood; also that the columns, pilasters, arches, rails, and balusters enclosing the grand stairway, be of marble instead of iron; also the wainscoting and soffits of grand stairway be of marble instead of plaster, — because such change is necessary to make the whole harmonize."

But as the experts said that these things were "necessary to make the whole harmonize," it must be inferred, if they knew what they were about, that changing all the rest of the interior was unnecessary for harmony. Whether it was or not, it must be admitted that the commissioners were very liberal to the architects; not in paying them, for the work was done for a fixed sum, — 2½ per cent on $3,000,000 added to $5,000 premium, or $70,000 in all, — but in giving Mr. Piequenard an opportunity for the free exercise of his exuberance in ornamental designing. In this he has more than realized all that was expected by those who knew him. Notwithstanding all that has been said in detraction by the Chicago *Tribune*, which has declared unrelenting war against the State-House and Penitentiary Commissioners, the interior ornamental work of the rooms and corridors offers fine examples of the latest developments of French Renaissance decoration, and probably the most elaborate in this country. The plastering is on wooden lath, ¾ x ¾ inch, and set ½ inch apart. The brown mortar is half cement, to give hardness sufficient to carry the *carton-pierre* ornamental work, all of which is nailed on. No cast-plaster ornament is used, all moulded work being in *carton-pierre*. The greatest fault in the interior work is in the use of this material in connection with the hard-wood finish as an imitation of carving. Not only are the grand stairway and wainscotings of the corridors in marble and polished granite, but the rotunda is mostly faced with stone and polished granite. The chambers of the House and Senate are vastly more elaborate than originally designed, and when decorated will far surpass in effectiveness — as I believe they do even in size — the Senate Chamber and Representatives' Hall at Washington.

Of the exterior of the building the impression given is not so favorable as that of the interior; and one cannot help feeling that this is one of the last domed State Houses of what may be called the "vernacular American type" that we shall see erected. Since old-fashioned Connecticut has got out of the rut and accepted a progressive style, notwithstanding her adherence to the traditional dome, we may fairly hope to see the dawn of a new era in public architecture. The Illinois building is greatly disfigured by the mansard roofs which cap what are called the "wings," but are in reality the most important parts of the structure, being intended for the two legislative bodies. The mansards are low in proportion to the whole height of the building, and of convex shape, covered with stamped zinc scales which are unduly prominent and mainly serve the purpose of advertising the zinc ornament business. The mansards are on no other part of the building, and where they are serve only to enclose the roof-trusses, where a sloping roof would have answered as well. The dome is an improvement on the original design, and by itself would look well, the proportions being well studied; but it is only partly of stone, and sham materials are extensively used in it. The exterior of the building may be improved somewhat by the four Corinthian porticos, but they will only serve to demonstrate again how money can be spent uselessly on public buildings.

The present condition of this immense structure is as follows: The main shell of the building is enclosed and roofed without porticos; the dome is barely roofed in. The rooms and offices and some of the corridors of the first story are completed. The chambers of the Senate and House are finished enough for occupancy, together with their corridors and rooms. The whole of the basement and the interior of the rotunda and dome are all unfinished. Very little furnishing has been done, and that of a temporary nature. A few rooms only have been decorated in color. The surviving architect in his report gives a list of things to be done, covering two pages. His estimate of the amount necessary to complete the building is $666,889.30. There is much material worked and on hand for the uncompleted work.

The *status quo* of the building financially is now as follows: At the date of the report Dec. 1, 1876, there remained unexpended of the three and a half millions, only $67,783.37. All work has been stopped, and the Legislature has no constitutional power to finish the building. The only thing that can be done is for the Legislature now in session to authorize a popular vote on an appropriation of money, and this cannot be had until November next. Therefore the building must stand as it is for a year, and will inevitably deterioriate in that time, as it is not in condition to take care of itself.

In its present state, notwithstanding all its defects and much bad work which must be corrected, it certainly shows more for the money than any other public building of its kind that has been erected within ten years. If completed and furnished for the amount estimated by the architect — only half a million of which will go directly into the building, making the total cost a round four millions — it will certainly be the cheapest public building of its size in the country, and, if not a model of administrative ability, will show at least what can be accomplished by the use of public money through the hands of a board of commissioners whose integrity no one has reason to question.

THE DRAINAGE OF COUNTRY HOUSES.

PROVIDENCE.

TO THE EDITOR OF THE AMERICAN ARCHITECT AND BUILDING NEWS.

Dear Sir, — I have been very much interested in the communications which you have published in regard to drainage of country houses; and feeling convinced that the use of the tight cesspool is the only safe plan, allow me space to describe a very common method of constructing rain-water cisterns and tight cesspools which obtains in this vicinity, and which is found to be not only cheap but very durable, provided the soil is not too sandy or too full of springs of water.

Excavate a cylindrical hole of the desired diameter and depth, taking care that the sides do not cave in, and give the sides and bottom a coat of hydraulic cement about an inch and a half thick, leaving the surface rough, and when sufficiently set put on a second fine coat, which should be left smooth from the trowel. The bottom is dished, and the coating of cement is carried down the sides and across the bottom. It is sometimes necessary to give the whole cesspool an additional thin coat before it can be warranted to be tight. The sides should be cemented only to within about three feet of the surface of the ground, and a skew-back formed with the cement to receive the springing course of brick for a brick dome, with which the cistern or cesspool is to be covered instead of with large stones.

This dome is laid but four inches thick by ordinary brick-masons, without a form or centre, and then covered all over with a coat of cement.

A man-hole of any required diameter is left in the centre of the dome, and carried up to the surface of the ground by a brick ring, and capped with a cast-iron flanged ring and cover. The iron ring should cover the top of the bricks to protect them from frost or water, and should be set high enough to allow the ground to be graded with a fall from it in every direction if possible. A perforated cover like those used for sewer man-holes is to be preferred, especially if the cesspool is ventilated as described by Mr. Bayles.

A. S.

BUILDING-ACCIDENTS AT TRINITY CHURCH, BOSTON.

BOSTON, Feb. 14, 1877.

EDITOR AMERICAN ARCHITECT.

Your correspondent Mr. Smart, in your last number, is not quite just in implying in his communication that the fatal accidents that occurred during the construction of Trinity Church were due to the negligence or parsimony of the contractors. Of the three men who lost their lives on the work, the first, while laying stone, allowed the tenders to pile up beside him a mass of material until the weight broke down a staging quite strong enough for its proper service. The second, engaged alone in taking down a stage, laid some planks aside, and afterwards carelessly walked out upon one of them until it tilted, and he fell.

Both of these misfortunes, though the first might have been prevented by extraordinary care in supervision, cannot be attributed to any thing but the carelessness of the sufferers.

In the third case, the men were throwing stone chips and rubbish from the top of a finished wall, under careful supervision, a guard having been constantly stationed at the foot of the wall to warn off the other men. Early one morning, before either the guard or the foreman had arrived, the men on top of the wall threw off some chips, one of which struck a man passing below, fatally injuring him.

This was almost criminal carelessness on the part of the workmen; but the contractors had done all they could, as it seems to me.

Mr. Smart should receive all possible sympathy and encouragement for his efforts to defend the lives and happiness of workingmen; but it will not hurt his cause to be set right in regard to parties so conscientious and considerate in regard to their workmen as the contractors for Trinity Church.

T. M. CLARK.

CORRECTION.

TO THE EDITOR OF THE ARCHITECT AND BUILDING NEWS.

Dear Sir, — In the editorial notes of the issue of Feb. 10, *in re* Withers *vs.* Cushing, my name is misspelled; it should be Oswell, *not* Oswald. I shall be glad if you will make this correction.

Yours respectfully,

A. E. LLOYD OSWELL.

JOURNEY OF AN ARCHITECT IN THE NORTH-WEST OF EUROPE.[1] — V.

THE people of the North, so skilful in all carpentry work, are not less so in the manufacture of furniture. They know perfectly well how to give to all kinds of wood those forms which correspond to its nature and the purpose for which it is intended. Timber is still plentiful in Northern Germany, and it has supplied builders with materials which they have so happily employed in the decorations and furniture of their dwelling-houses. As German masons have respect to the value and nature of the stone which they employ in their buildings, so do their cabinet-makers study the value and nature of wood. They employ it according to its characteristics and qualities, avoiding useless waste and large curved portions which interfere with the grain of the wood; but, on the contrary, they always form combinations with it in the direction of the fibres, and so preserve all its strength. As to the taste shown in the execution of this kind of work, the reader must judge for himself.

Thus, instead of our plaster ceilings — which conceal the timber and lessen its duration, which are subject to cracks and crevices

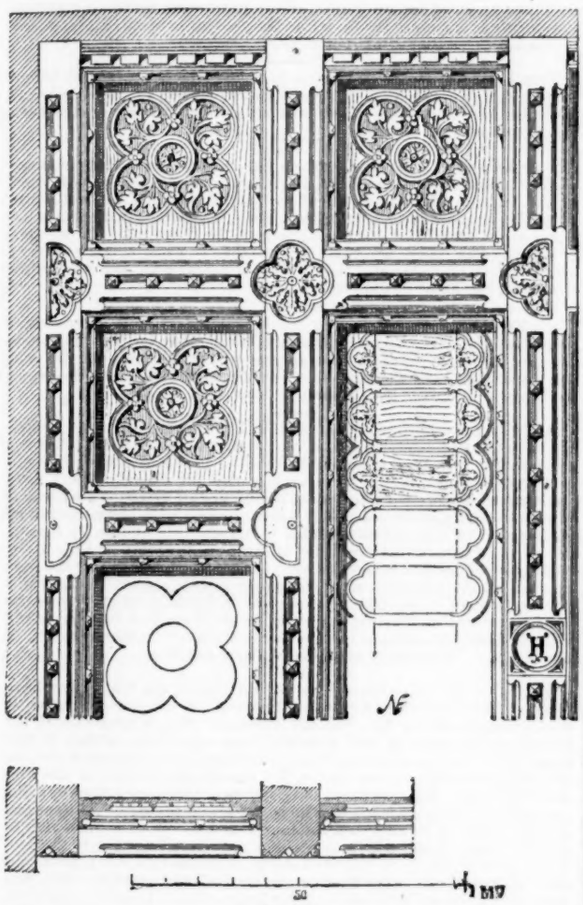


Fig. 127.

which cannot be avoided, and require continual attention and expensive repairs — they have constructed panelled ceilings, of which fig. 127 affords an example. These ceilings seem, at first, to remind one very strongly of those of the town hall at Augsburg, and the Presle mansion at Nuremberg. They are not therefore interesting in respect of originality, but of very ingenious adaption.

The ceilings of public buildings of the twelfth and thirteenth centuries consisted only of bare joists resting by each extremity on a wall, or if the distance was too great, on an intermediate beam. There were few or no openings in the walls to receive them, but corbels inserted in the masonry to support the ends of the beams. The edges were chamfered; the intervals and projecting parts were painted, and sparingly decorated. In the fourteenth and fifteenth centuries these primitive arrangements were transformed and enriched. The beams were placed so as to form panels and compartments ornamented with carving and painting; and at last the decoration assumed the principal feature, being distinct from the timber-work to which it was affixed, and thus ceasing to be an integral part of the structure.

[1] Printed by permission from the advance sheets of a Journey of an Architect in the North-west of Europe. Translated from the French by M. Felix Narjoux. James R. Osgood & Co., Publishers.

The ceiling represented in fig. 127 is, as we have said, copied from fourteenth-century models, and in reality presents only the lower face of the boards, thus showing plainly the nature of the construction which they embellish. In the ceiling the panelling is

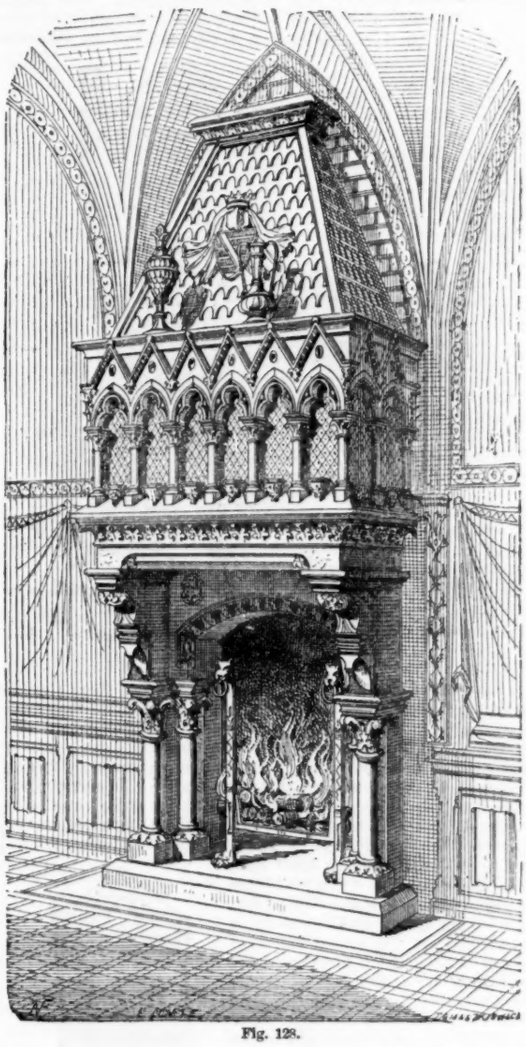


Fig. 128.

supported by furring nailed along each principal and cross beam. The carvings are in solid wood, and the groundwork of the panels rests on planks cut so as to give them the necessary projection; our sketches show the plan of construction. Above these large girders are joists of sufficient thickness to support the upper floor, and to fill up, in certain parts, the intervals between the beams.

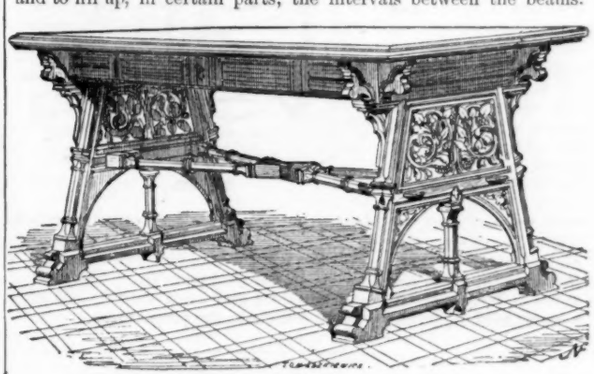


Fig. 129.

The height of the room in which these ceilings are placed is eighteen feet, which accounts for the outlines being so bold and the carvings so decided. As to the price of these ceilings, it is somewhat high, the square foot costing two and a half thalers.

The chimney-piece (fig. 128) stands in a large vaulted hall of octagonal form. It is made of white sandstone and polished serpent-

ine. By means of a combination of colors which cannot be seen in our sketch, the union of stone and marble of different tints gives the colors of the armorial bearings of the proprietor, whose escutcheon is placed over the mantle-piece. The table (fig. 129) is intended to stand before a sofa in a drawing-room. The dimensions of its various parts may perhaps appear exaggerated when compared with those of our modern furniture; but on the other hand, they increase its firmness and durability. The legs spread out at the end, by means of an oblique arrangement, which gives greater support and steadiness to the upper part. The braces and crosspieces which connect the extremities are rather high, in order to prevent persons placing their feet upon them; contact with which injures them so rapidly. This precaution may appear trivial; but it is the mark of a practical and thoughtful mind. This table in walnut-wood cost sixty-five thalers.

Fig. 136.

The chairs (figs. 136 and 138) are in oak or walnut; the arm-chairs, without the covers, cost fifty-two thalers. In order to avoid the usual manner of connecting the back of the chair and the hind legs, the designer (Mons. Oppler, the architect) has obtained the necessary inclination for the back, by causing the framework to go down to the middle of the hind legs, which are placed at a more oblique angle than those in front. This idea, which is very simple and ingenious, is also applied to the construction of common chairs, which are thus more steady than ours, the legs of which are united with the back at the level of the seat, and they are more comfortable than those with upright backs. The price of common chairs is two and a half thalers.

Fig. 138.

These articles resemble joiners' rather than cabinet-makers' work. They are really strongly made, and their construction is well-planned and executed. The wood is of fine quality, well cut according to the grain, with sharp and well-defined sides and edges. The joints are made with the greatest care, always fastened with wooden pegs, without any parts let into each other or nailed. There is no veneering or gluing: on the contrary, the mouldings and carvings are cut out of the solid wood; but there is often a deficiency of grace and elegance in the workmanship. The general effect is heavy, clumsy, and massive; and when they do not copy ancient models, there are often defects in the proportions.

NOTES AND CLIPPINGS.

THE HOTEL DE VILLE. — The walls of the first story of the new Hôtel de Ville at Paris, which are built of granite, are nearly finished. The upper portion, which is to be of sandstone, can be built more rapidly and at less expense, so that it is expected that the whole building will be nearly finished at the end of the year. The architects still hope to be able to preserve the vaulting of the Salle de St. Jean.

TESTING IRON. — The President has sent a message to Congress requesting that a small appropriation may be made for continuing the board for testing iron and steel. We trust so important a series of investigations may not be discontinued at this early date.

CHURCH AT SYRACUSE, N.Y. — On the 9th inst. was consecrated at Syracuse, N.Y., an Episcopal church, which was designed by Mr. White and built by Mr. John Nicholson. It consists of nave, transept, and an apsidal chancel, and has moreover a tower at one of the front corners some eighty feet high. It is built of dark slate-colored limestone relieved with a lighter stone; the interior, which is finished in chestnut, is covered by an open-timbered roof. Built into the exterior of the front wall is a piece of Canterbury Cathedral. The design of the church is Gothic of the Tudor period. The cost of the completed building is about $21,000.

NATURAL GAS. — There are now three gas-producing wells at Beaver Falls, Penn., one of which has been in operation over seventeen years. Two of the wells are nearly 1,100 feet in depth, one having been reamed out, and is said to produce about 100,000 feet per day, which is utilized in the cutlery works, except what is used in the gas-lighting works, where it supplies about sixty per cent of what is used. The other well is to be bored out to eight inches. The third well, recently bored, has struck a good vein of gas at 500 feet. This well is to be cased twelve inches, with a small tube inside to continue the boring to a greater depth, while the present product of gas, which is much greater than the other wells, can be utilized.

THE LONDON OPERA-HOUSE. — It is said that the £130,000 necessary to complete the National Opera-House on the Thames Embankment has been raised, and the works which have for some time been suspended will be resumed.

THE DOORS OF NOTRE DAME. — The *Academy* says that the doors of the Cathedral of Notre Dame, Paris, are to be replaced by new ones, as the old ones which it speaks of as "masterpieces of ancient sculpture" have fallen to pieces through age. We cannot make out what doors are intended, for our recollection of the doors upon the western front is, that they are plain oaken doors with most elaborate wrought-iron hinges, and that there is nothing in the woodwork deserving the name of sculpture.

ST. EUSTACHE, PARIS. — The repairs on the famous Renaissance church of St. Eustache are now nearly completed; besides the restoration of the main entrance and several minor restorations, the roof and campanile over the chapel of the Virgin, which were destroyed by fire in 1871 during the Commune, have been restored.

A GENEROUS MODEL. — M. Charles Alis Dubosc, a famous French model who died lately at the age of eighty-eight, left the following testament: "Having commenced to sit in 1804 at the age of seven, and having continued to serve as a model till seventy-two, I have thus passed my life with the most distinguished artists. I wish that after my death the little fortune I have gained with them should be consecrated to a foundation useful to artists. Consequently I name as universal legatee the Institute of France, Academy of Fine Arts, to dispose of my succession in the following manner: after the payment of all the expenses, what composes my succession in the three per cents shall be distributed each year in equal portions among the young painters and young sculptors received *en loge* for the *Grand Prix de Rome*, this sum to be remitted to them at the moment of their admission." The legacy amounts to about $40,000.

MEXICAN ONYX. — Specimens of Mexican onyx which we have received show us what a valuable material for interior decoration is being introduced by Mr. Manuel Fortuno. Those who visited the Centennial Exhibition will remember the attractive exhibit of this material in the Mexican department; notably a mantle-piece which we believe was purchased for one of the summer-residences of the Emperor William. The specimens have somewhat the appearance of a fine gypsum, but are manifestly of a finer and firmer texture. The specific gravity is said to be 2.90, and the hardness 4.50. It is a misnomer to call the stone onyx, which is really a species of agate composed of layers of chalcedony of different colors, whereas this is a translucent striated limestone similar in character to the onyx marble, which was first introduced by the French at the International Exhibition of 1862, and which is said to be a stalagmitic formation found in Algeria. The composition of the Mexican onyx is, lime, 55; magnesia, 1.25; water, oxides of iron and manganese, 0.10; carbonic acid, 42.40; sulphuric acid, 1.25.

PROCESS FOR DRYING THE ATMOSPHERE OF A ROOM. — In order to insure the complete dryness of the atmosphere of a room at Oxford, which is devoted to experiments upon electricity of high tension, an apparatus has been invented, which consists of a copper cylinder constantly heated by gas-jets, over which passes an endless band of flannel. The vapor which is driven out of the flannel is drawn off by the current of air that feeds the gas-jets. The flannel, dried by contact with the heated cylinder, passes through the room, and in its cool state collects whatever moisture there is in the room.

A ROLL OF PAPYRUS. — It is said that some twenty years ago a Mr. A. C. Harris went with his daughter, Miss Selima Harris, on a tour to Egypt. He found under the floor of an old tomb in Thebes a large roll of papyrus, covered with inscriptions. It was one hundred and thirty-nine feet long by sixteen and one-half inches broad, and looked something like a stair-carpet. After his death Miss Harris sold it to the British Museum for a large sum. It proved to be a complete record of the life and works of Rameses III., containing a statement of the condition of things at Thebes three thousand years ago.

THE AMERICAN ARCHITECT AND BUILDING NEWS.

(SUPPLEMENT.)

TENTH ANNUAL CONVENTION OF THE AMERICAN INSTITUTE OF ARCHITECTS, HELD AT PHILADELPHIA, PENN., OCT. 11, 1876.

PAPER ON THE ARCHITECTURAL EXHIBIT OF THE CENTENNIAL EXHIBITION.

BY R. M. HUNT, FELLOW.

MR. PRESIDENT AND GENTLEMEN OF THE INSTITUTE, — I propose to call your attention to a brief review of the architectural exhibit of the Centennial Exhibition, — a most appropriate subject for discussion during our Convention of 1876.

I beg, therefore, to ask your consideration, first, of some of the effects occasioned by the great architectural revival since 1851, the natural outgrowth of the first World's Fair, and the succeeding ones of London, Paris, and Vienna.

One of the most useful and practical benefits of these great International Exhibitions is the familiar manner in which the industrial arts have been presented to the general public, as well as to the specialist; and which has been of the greatest possible service in educating and cultivating laymen, as well as instructing professional students.

And what has so told upon the individual mind has in a larger way influenced municipalities and corporations; resulting in the greater attention paid to sanitary science of late years; the elaborate and thorough systems of sewerage and drainage; the lighting of our houses and streets with gas; telegraphic communication and rapid transit; the introduction of healthful and plentiful supplies of water and air into the midst of centres of population; to all of which little or no thought was given formerly, but which now are deemed of paramount importance in the construction of our modern cities.

In the various capital cities of Europe, the narrow, tortuous, dismal streets of the middle ages, which existed almost intact until a quarter of a century ago, have made way for broad and noble thoroughfares in harmony with the requirements of the day: edifices are erected after the *new*, not the *old;* and the spirit of improvement which the conventionalist and the antiquarian call the "curse of the age" tears down the damp old walls, and air and sunlight now pour in where disease and crime once held high festival. The cry was loud in Paris, when Baron Haussmann, under Napoleon III., opened his boulevards right and left, giving breathing space to its population of millions; and many a traveller to-day sighs in Rome over the strong-limbed Piedmontese who is laying the sewers and drains under the new *régime*, to drive away the very fever which might send the same traveller home, shorn of his strength, a sadder and a wiser man. He sighs because the lazy, dirty, charmingly picturesque Roman peasant is being pushed out of sight.

It cannot be denied that some quaint and picturesque nooks and corners have disappeared, nor that certain historical landmarks have been obliterated; but, as a general rule, monuments of historical interest or artistic value have been preserved and repaired, even reconstructed, particularly in France, and under the empire, which restored with great minuteness of detail châteaux and churches fast crumbling away under the heavy foot of time. Even in our new country, where so much remains to be accomplished, many systematically find fault with this so-called "mania for modern improvement," which must grow out of the wants and requirements of modern civilization, and with us, in a peculiar degree, out of the rapid growth of large cities and manufacturing towns, where cause and effect follow each other with a rapidity unknown in the Old World.

We, as a body, have accomplished much in this direction; and yet it is a fact hardly to be denied, that our profession does not hold in this country the elevated position it has always held in Europe. Our task is, however, a peculiarly difficult one; for it is no easy matter in a new country to enlist the sympathies of the general public beyond the securing of the more material results; and not until art-education has become more general can we hope for that sympathy and appreciation which is born of knowledge.

But already there is a promise of better things. A few technological and industrial-art schools are in successful operation, and the first steps have been taken toward the art-education of the masses; while, in this Centennial year, we have just cause to congratulate ourselves upon the establishment of Art Museums, similar to that of the South Kensington in London, in several of our larger cities; and we may reasonably hope that our Exhibition will stimulate and improve all our art-industries, as the first World's Fair improved those of Great Britain.

Having thus alluded to some of the important bearings which international exhibitions have on modern progress, before considering the architectural exhibits contained in the various buildings, a few words about the locality and the buildings themselves might not be amiss.

The Exhibition grounds, in Fairmount Park, which possess the most striking natural advantages, comprise about two hundred and forty acres, and are on an elevated plateau, traversed by two small streams flowing into the Schuylkill River. This admirably adapted site, well wooded and picturesque, has rather the form of an irregular equilateral triangle, the south side of which is occupied by the Main Building and Machinery Hall; while Memorial Hall and Horticultural and Agricultural Halls are on the north-east side, with the Woman's Pavilion, United States Government Building, and most of the States' buildings, grouped toward the north-west. Interspersed among these are about two hundred structures, comprising foreign commissioners' buildings, those for the special exhibits, cafés, restaurants, bazaars, etc. The grounds are tastefully laid out as a landscape garden, with asphalted roads and walks following the natural contour of the land. A few broad, straight avenues, furnishing a more direct communication between the most important points, are wisely introduced, and form a grand and noble feature; while, on account of the vast extent of the premises, and the great distance between the buildings, a novel feature — that of a passenger-railway, running in close proximity to the principal buildings — has been introduced. The Exhibition buildings, with few exceptions, are well adapted to their various purposes, and are appropriate in design, and neatly executed. It is to be regretted, however, that more attention was not paid to the various structures erected by the different States and by special exhibiters. With the exception

of a few typical structures, mostly erected by foreign nations, little can be said in commendation; in fact, the great majority are beneath criticism, architecturally considered; whereas a proper attention to this important subject would have much added to the exterior beauty of the Exhibition.

Without entering into minute details of the various buildings of the Exhibition, a few general remarks may not here be inappropriate.

The Main Exhibition Building is parallelogram in form, and covers an area of more than twenty acres. It is 1,880 feet long, 464 feet wide, and 70 feet high, and was erected in about eighteen months, at a cost of $1,580,000. The principal nave, 120 feet wide, extends between the galleries located at either end, and is accompanied by two others, each 100 feet in width, with intervening and outside aisles, respectively 48 and 24 feet wide. Similar naves with intervening aisles cross the building in the middle. Iron columns placed 24 feet apart — lengthwise of the building — support the wrought-iron trusses of the roof, which is covered with tin. The flooring is of plank, laid on sleepers resting directly on the ground, with no open space beneath, — a precaution against fire; a complete system of water supply and drainage being also provided for protection against such a contingency, and for sanitary purposes. The sides of the building are filled in between the columns with brick-work to the height of seven feet, with glazed sash above, a portion of which is movable for ventilation. Louvre ventilators are also introduced over the main naves, together with skylights.

The general effect of the building is satisfactory, considering its temporary character, and the consequent imposed restriction as to cost, and also in view of the materials used, — glass and iron. It should be here stated that the columns and trusses are so designed as to enable them to be taken down and used elsewhere. As might be expected, there is a total absence of any thing like monumental grandeur, or even apparent substantiality, about the building. A certain stiffness and stringy monotony pervade the whole structure; while the relative height, as compared to the vast area covered, produces a squatty appearance.

The façades, with their central features and corner towers, connected by lower galleries in front of the main walls, are somewhat relieved of their monotony by pleasing effects of light and shade.

The central portion, carried up with its towers, forms an appropriate crowning to the general mass.

The interior is light and pleasing, but wanting in effect and variety. The spectator, taking in as he does at a glance the entire space, fails to appreciate the extent and vastness of the *ensemble*.

The ground-plan of the Paris Exhibition of 1867 — with its concentric oval naves and radiating aisles, presenting an ever-changing variety — was far more satisfactory in this respect, besides being better adapted for the classification of the various exhibits, either in groups, or as national exhibits. The abandonment of any similar plan is to be attributed to the great loss necessarily sustained; as the mass of the materials, when taken down, can be put to no practical use.

Machinery Hall, also a parallelogram in form, is 1,402 feet long and 360 feet wide, and covers an area of about fourteen acres. It was erected in nine months, at a cost of $542,300. Two main avenues, 90 feet wide, 70 feet high, and 1,360 feet long (the distance between the galleries occupying the ends of the building), are accompanied by one intervening and two side aisles, each 60 feet wide, and 40 feet high. A transept 90 feet wide crosses in the middle of the building, and extends beyond the main hall on the south side. This is flanked by aisles 60 feet wide, and forms an annex for hydraulic machinery. On account of the great similarity in plan between this and the main building, the effect produced is much the same: the interior of Machinery Hall, however, appears more substantial, due in part to the use of wood in its construction; whilst great praise is due to the admirable arrangement of the hydraulic annex which forms so marked a feature.

Agricultural Hall was erected in about eight months, at a cost of $260,000; and is 820 feet long, 540 feet wide, and covers an area of over ten acres.

The main nave is crossed at intervals and at right angles by three similar ones, all constructed of Howe truss arches of Gothic form. The spaces between these naves, and the spaces which occur at the four corners of the building also, form, as it were, so many covered courts. The disposition of this building is well adapted to its purposes; and it owes much of the effectiveness of its interior to its grand arches springing directly from the ground, — a very satisfactory feature, contrasting favorably with the stilted and rather unstable appearance of the perpendicular supports employed in the two buildings just alluded to.

The United States Government Building (with its naves and aisles) in the form of a Latin cross, and the Women's Pavilion in the form of a Greek cross (with accompanying corner courts at the angles), respectively cover an area of 102,840 square feet and 26,368 square feet. These constructions are of wood, and are effective in their appearance, both externally and internally. This is particularly due to their disposition in ground-plan, which represents types so familiar to us all.

Among the minor temporary structures worthy of passing notice are a United States Post Hospital, and an Ordnance Laboratory Building. This latter structure consists of a wrought-iron frame, riveted together, and covered with a light wood casing. In the event of an explosion, only the roof and sides would be carried away; while the frame would stand, to protect inmates against injury from falling materials.

A peculiar feature to be observed in the Art Annex Building is the communication between the numerous rooms which is provided for in the angles. Good hanging space is thus gained, but at the expense of considerable perplexity to the visitor.

The State Buildings of Ohio, New Jersey, Massachusetts, and Connecticut, are to be commended; the two latter being in the style of the old Colonial homes of New England, the former representing types of our modern country-houses. In the Ohio Building, a great variety of the building materials of that State are cleverly introduced.

The New York State Building is truly remarkable from quite another point of view, and may be intended as a representation of the *New American Style* or *Order of Architecture*, based on *hexagonal principles*, models of which form a curious exhibit in the Agriculturall Hall!

A marked contrast exists between most of these State structures and those of England, Germany, Sweden, France, and Japan, all of which are very praiseworthy, and typical in design and execution.

A few words, in conclusion, about those of the exhibition buildings which are destined to remain, — Memorial and Agricultural Halls. The latter, constructed in the Moorish style, is appropriately located on a terrace. On either side of a central conservatory, 230 by 80 feet, and 55 feet high, are the forcing-houses. The ends of the building are devoted to reception and dining-rooms, offices, &c. Four principal entrance vestibules occupy the middle of the four sides: from these, stairs lead to the interior and exterior galleries above. In the basement, which is fire-proof, are the kitchens, storerooms, heating apparatus, etc. This building, with an area for exhibition-purposes of 122,500 square feet, was built in eleven months, at a cost of $300,000. The *ensemble* is satisfactory, especially when viewed at an angle; the curved surface of the glass roofs of the forcing-houses gracefully harmonizing with the middle portion above, which is surmounted by a lantern.

Memorial Hall, also located on a terrace, was erected by the State of Pennsylvania and the City of Philadelphia, and is by far the most pretentious structure on the Exhibition grounds. It is fire-proof, and covers about an acre and a half; it being 365 feet by 200 feet, and is 59 feet high, over a basement 12 feet in height.

Its cost was $1,500,000, and twenty months were employed in its construction. It is hereafter to be used as an Industrial Art Museum, to be inaugurated at the close of the Exhibition. The principal entrance vestibule, 82 feet by 60 feet, and 53 feet high, opens into a grand central hall 83 feet square and 80 feet high; the square dome above rising exteriorly to the height of 150 feet. On either side of this central hall are located the main galleries, 98 feet long, and of the same width as the hall. These are flanked by cross-galleries at the ends, 89 feet by 28 feet, which extend between the pavilions at the corners. In the rear, the spaces between the corner pavilions and the central entrance are devoted to studios and small exhibition-rooms, with a communicating corridor. These latter rooms, also those in the corner pavilions, are lighted by side-lights: in the remainder of the building sky-lights are used. Open arcades are happily introduced in the principal façade, which extend from either side of the main vestibule to the corner pavilions: these arcades form covered promenades, and at the same time serve as screens to the blank walls of the galleries. The intervening spaces between these arcades and the outer walls of the main galleries are laid out in garden-plats.

At a certain distance the general effect of the masses is rather satisfactory; but upon a nearer approach, the building, which is constructed of granite and in the Renaissance style, loses much; the ornamentation being very commonplace and meagre in design, while in execution it leaves much to be desired. Great defects also exist in the interior distribution, among the most flagrant of which is the poor accommodation of the upper stories of the corner pavilions. Greater simplicity of design and breadth of treatment, with less ornamentation, would undoubtedly have produced a nobler effect, and been more in harmony with the material used, perhaps not the most appropriate. A want of scale also pervades the details throughout: this is specially observable in the main central hall, the dome of which rests clumsily on the walls.

In view of the fine and varied exhibits made in painting and sculpture, and of the numerous and interesting displays in the art-industries, it can hardly be said that their sister art of architecture has been fairly represented at the Centennial Exhibition, whether considered æsthetically or as an art of construction; the designs being few in number and mostly of minor importance. This may be somewhat accounted for by the fact, that architectural designs, and projects of construction, have often necessarily only a local interest; while the technical character of architectural drawings prevents them from being appreciated, or even properly understood, by the general public. To the great number also of architectural publications which have sprung into existence since a few years, containing every thing of interest to the profession, may be attributed the meagreness of the exhibits. For these and other causes, geometrical drawings — of such paramount importance — have gradually been superseded by perspective views; whilst the latter too often have been, as on this occasion, supplanted by photographic views of the finished structures, so that the handiwork of the architect, so far at least as the design is concerned, is wholly ignored.

In consequence, the Exhibition is wanting in much that would render it interesting and instructive, not only to the profession, but to a large class of the public, who would certainly appreciate a thoroughness, both in architectural design and construction, which prevails abroad, and which is wanting with us; due to a more scientific and judicious use of the various building materials, and to the higher standard of taste, which naturally exists in the Old World.

As compared with the exhibits of other nations, one is struck with the ambitious pretension of our designs, overloaded as they too often are with meretricious ornament. Another salient feature is the attempt to produce novelty of effect, often resulting in a want of harmony and repose, so essential to good work. A certain insane desire to carry up some portion of a building to an excessive height was remarked upon by a foreigner, who naively inquired why it was that we Americans did this, and why a *petit bon homme* was so often stuck on the top of our buildings.

Without wishing to particularize, which would detain your kind attention too long, I cannot refrain from alluding to the satisfactory exhibit made by the State of Massachusetts. Complete sets of geometrical drawings accompany the perspective views of the various buildings. Among other projects of merit may be mentioned, as worthy of especial notice, designs for a college, a grammar-school, a hospital, an insane asylum, and an abattoir.

The brilliant display made by Great Britain in the other art departments renders the meagreness of her architectural exhibit all the more striking. The design for the decoration of St. Paul's, London, and that of the new Exchange Building, Liverpool, — the most important exhibits, — are both wanting in simplicity and breadth of treatment. In the former there is a total absence of that repose so desirable, not to say absolutely necessary, to secure that sublime grandeur and dignity which should stamp such work. The latter, in the French Renaissance style, is greatly deficient in originality of design, and in thoroughness of treatment in the general distribution of the masses of the façade, the relative importance of its principal features, and in its ornamentation.

Excepting some designs by Burges and Spiers, — those of the latter decidedly French in treatment, — and one or two other designs, a certain crudeness prevails in the English exhibit. It is but fair to add, that but few of the prominent members of the profession in England have contributed.

This reflection applies with still greater force to the French contribution, where two rejected designs alone are worthy of particular notice: one being a noble and imposing project for the Church of the Sacré Cœur at Montmartre, by Crépinet; and the other a project for the Théâtre de la Renaissance in Paris, by Lalande, which latter is notable for the talent shown in overcoming difficulties occasioned by the restricted and irregular shape of the ground-plot. We must except also the Orléans Railway Station in Paris, by Reynaud, a work of great importance and merit, the design of which was remarkably well rendered; also certain designs and models of light-houses exhibited by the Ministry of Public Works, but which more properly belong to the engineering exhibit.

When we reflect upon the numerous and grand edifices erected by such men as Lefuel, Duc, Garnier, Questel, Millet, Ballu, and upon the thorough and remarkable restorations made by the late Duban and Viollet-le-Duc, we cannot fail to deplore that France was so inadequately represented.

Considering also the grandeur and importance of the architectural work done in Vienna by Schmidt, Hausen, Foerstel, and others, our disappointment is great indeed at seeing their grand achievements only in photography.

Russia exhibits a well-studied design of a cathedral church, not treated, unfortunately, in the Russo-Byzantine style, but rather in the Lombard, so prevalent on the borders of the Rhine.

Belgium's only exhibit is also a design for a cathedral in the Gothic style thoroughly well studied, the drawings of which are remarkably well rendered.

The projects exhibited by Italy and Spain, with one or two praiseworthy exceptions, are notable rather for their originality — even eccentricity at times — than for competent handling.

The architectural exhibit of Switzerland, though consisting mostly of designs of minor importance, is more complete than that made by any other country, nearly every canton being represented. Designs of hospitals, schools, asylums, and other public institutions, predominate. They are generally noteworthy for the ability shown in their ground-plans, which are mainly well adapted to their various requirements. But few attempts are made at any architectural effect in the

façades, which are, however, simple and appropriate. The Town Hall of Winterthur by Prof. Semper offers a striking exception in this respect. The design, by Goss, of a theatre for the city of Geneva, is also an exception. This project is unmistakably inspired by that of the Grand Opera House of Paris by Garnier. On a much smaller scale are to be recognized many of the salient features of that remarkable edifice, so superior to all others of its class in truthfulness of design, where every important part in plan is properly accentuated in elevation, and which, though not faultless, is yet much to be admired for its variety, and that richness of ornamentation so appropriate to such a monument.

That important problem, viz., the amelioration of dwellings for the laboring and industrial classes, has been almost entirely ignored at the Centennial. This absence is especially to be remarked upon, so much attention having been paid to this subject, particularly since the Paris Exhibition of 1867, when the French Emperor received a special medal for his well-merited and successful efforts in this direction. Holland and Switzerland alone furnish projects of this class; and these are very incomplete and unsatisfactory. That such buildings can be made a practical success is proved by the report of the "Improved Industrial Dwellings Company" of London, which states that no less than ten thousand persons occupied dwellings under their control in January, 1876; while their available capital was then £1,000,000. To the untiring zeal displayed during the past fourteen years by Sir Sidney H. Waterlow, chairman of the association, is due in a great measure the success of this enterprise.

Permit me, in conclusion, to allude to the unavoidable absence of our venerable President. His absence is to be especially regretted on this occasion, full as it is of past associations, present interests, and aspirations for the future; for, during half a century of indefatigable professional industry, no one among us has done more to raise the standard of our noble profession. To the record of none, whether as regards ability, integrity, or perseverance, may the architects of this country better look back for example and encouragement. Unsatisfactory in many respects as the architectural exhibit at the Centennial Exhibition is, he could not have failed to appreciate the marked change and progress made in our profession during the past fifty years, — an advancement which his own conscientious professional life has largely influenced.

ARCHITECTURE AND ARCHITECTS AT THE CAPITAL OF THE UNITED STATES FROM ITS FOUNDATION UNTIL 1875.

BY ADOLF CLUSS, F.A.I.A.

THE capital of the United States was selected after mature reflection, and was nursed by professional talent from its start.

In February, 1791, Thomas Jefferson, as Secretary of State, appointed Major Peter Charles L'Enfant "to draw the Federal town and buildings." L'Enfant was a young French engineer-officer who had volunteered in the war. He was the author of the picturesque plan of Washington. An uncontrollable temper often brought him in conflict with the executive authorities, so that his official head was cut off on March 6, 1792, after one year's service. He died in 1825 in the vicinity of Washington. The foundation of the new city was coincident with Stuart's publication of "The Antiquities of Athens," which, opening a rich, unexplored mine, was followed by a predilection for the pure Grecian style and its historical revivals.

The United States Capitol and the President's House claimed first attention in the new city. Jefferson, whose experience and taste, acquired and cultivated while he was ambassador at the court of France, were highly appreciated, wrote on April 10, 1791, "For the Capitol I should prefer the adoption of some of the models of antiquity which have had the approbation of thousands of years; and for the President's House I should prefer the celebrated *fonts* of modern buildings."

A premium of five hundred dollars and a building-lot was offered for the best design for the Capitol. A contemporaneous expert writes, "This was done at a time when scarcely a professional architect could be found in any part of the United States; which is plainly to be seen from the pile of trash presented as designs."

Stephen L. Hallet, a French architect, presented plans on July 17, 1792, and his employment as architect followed. But shortly thereafter Dr. William Thornton, an English amateur of versatile manners, who had come from the West Indies, succeeded in having Hallet's plans superseded by what he claimed as his own plans, and in having the premium awarded to himself. The commissioners received instruction to act with as much delicacy as possible, and to retain Hallet in the public service; but he demurred to these arrangements, and a rivalry between the amateur and the architect followed, each of whom repeatedly modified his plans, so that after the foundations had been raised to the floor-line of the cellar, they did not fit the latest issue of either plan. Thornton had, it appears, carried the day by a neatly washed elevation; and when his ground-plans were corrected according to sound principles of construction, they looked so remarkably like Hallet's that this gentleman formally protested against the award, claimed the original invention, and begged leave to present proofs of it. Quarrels ensued: the commissioners demanded Hallet's plans; he refused to surrender them, and they in turn discharged him about July 1, 1794. Thornton was a thorough man of the world; he founded a race-course, and sported blooded horses. Hallet's name disappears from history after this time; but Thornton's claims were ridiculed before long. In the year 1804, Architect Latrobe denounced his plan in an official report to Congress, and animadverted upon the mode of carrying on the competition for plans of this great public building. He intimated that Thornton's work in the premises, being simply pictorial, could not claim dignity and consideration as an architectural composition. Hallet's original designs were restored to the archives of the Capitol after the lapse of many years, in 1871; and his memory stands vindicated at this day.

The second architect of the Capitol was George Hadfield, who had been requested to come from England, with a view to an engagement on the public buildings. He took charge of the work after Hallet's forced retirement, but was also compelled to resent the slights of Thornton and his fellow commissioners. These men in a rude manner sent Hadfield word on May 10, 1798, that his services were no longer required. Hadfield died in Washington in February, 1826. The City Hall and brick buildings with rough-cast fronts, in the Ionic style, at either side of the President's House, for the accommodation of Treasury, State, War, and Navy Departments, are his work.

Hadfield was succeeded by James Hoban, on May 28, 1798. Hoban was an Irishman, was educated at Dublin for the profession, and settled in 1780, in Charleston, S.C. After the conception of the capital, Hoban had come to Washington well recommended, was successful in the competition for designs of the President's House, was employed to construct it, and had it sufficiently advanced for occupancy in 1799. Still he could not please the civil authorities at the Capitol; and his connection therewith was ended in 1803, the north wing of the Capitol having been finished while he was in charge. The executive authority of the District was transferred from commissioners to a superintendent of public buildings in the year 1802.

Benjamin H. Latrobe, a native of Yorkshire, England, who was educated in Germany, had made the tour of Europe, and finally had studied with Cockrell, a prominent English architect, came over in 1796 to Norfolk, and settled in Richmond, Va., where he designed the penitentiary and several mansions. In 1798 he removed to Philadelphia, where he built the old water-

works on Penn Square, the old Banks of Pennsylvania and Philadelphia, and designed the Bank of the United States, subsequently built by Strickland, a pupil of his. Latrobe was called from Philadelphia to take charge of the work on the public buildings in Washington, in 1803. He accepted, and availed himself of Hadfield's services in the prosecution of the work. About New Year of 1804 Latrobe stated in a report, "The hall in which the House of Representatives is now assembled was erected in part of the permanent building. The whole of the masonry is of such bad workmanship and materials, that it would have been dangerous to have assembled within the building had not the walls been strongly supported by shores from without." This was no doubt due to the commissioners and the architects pulling in opposite directions.

Latrobe rebuilt considerable portions of the work; the old east front is considered as his work, and the south wing of the original Capitol was completed under him. The scarcity of money under Jefferson's administration protracted the work so that in 1814, when the Capitol was blown up by the British, nothing was finished besides what was indispensable for occupation. The centre part, afterwards occupied by the rotunda, consisted simply of a temporary frame passage connecting the two wings. After this act of vandalism had been accomplished, Latrobe conducted the reconstruction of the building in a thorough manner. He introduced in the north wing, columns with capitals of a composite order, in the decoration of which he worked leaves and fruits of the cotton-plant, tobacco-plant, and Indian corn. Latrobe kept on good terms with powers of the day until 1817, when a new superintendent was appointed by President Monroe. With him Latrobe soon came in collision, and resigned. He removed to Baltimore, built the cathedral and a part of the Commercial Exchange, and died in 1820, in New Orleans, where he was engaged in the construction of water-works.

President Monroe had become acquainted with Charles Bulfinch of Boston. He was pleased with his designs in the State House, in work done on the North and South Churches in Boston, in the State House at Augusta, Me., etc. Shortly after his inauguration as president, he invited Bulfinch to take Latrobe's place. He accepted only after Latrobe's absolute resignation, and proceeded to complete the wings. He also built the rotunda, old dome, and library, mainly by Latrobe's plans. Bulfinch kept on the work until the completion of the original Capitol in 1830, when he returned to Boston, and died in 1844 at an age of eighty-one years.

In the year 1850 the necessity for an extension of the Capitol was officially recognized. Competitive designs were invited by a committee of Congress, of which Jefferson Davis was chairman. A premium of five hundred dollars was offered to the successful author, and the right was reserved to Government to combine the merits of various plans.

Architect Charles F. Anderson, an Irishman by birth, received the premium, which was paid from the contingent fund of the Senate. After the award, President Fillmore, on whom rested the final decision, had an interview arranged, to which all the competing architects were invited. Mr. Thomas U. Walter of Philadelphia was intrusted with the designs and work under radical changes of the premiated design. He kept on the work until they were virtually completed. Lieutenants M. C. Meigs and Franklin shared the responsibility of the execution of it for a number of years.

The old Capitol has fronts of a porous gray sandstone from Aquia Creek on the lower Potomac; the extensions are faced with Lee marble; its architecture is in the spirit of Italian Renaissance of the sixteenth century.

Since Mr. Walter's retirement, Mr. Edward Clark of Philadelphia, a pupil of his, has been in charge of finishing the building. The total cost of the Capitol has been about $13,000,000, of which $2,700,000 had been expended before the extensions were commenced.

In the history of the Capitol it was incidentally mentioned that James Hoban, one of its architects, designed and built the "White House," originally termed the "President's Palace." President Adams moved into it in 1799, before the stairs were up. His wife used the now celebrated East Room for a drying-room to hang up clothes in. The White House had hardly been fully completed in 1814, at a total cost of $333,307, when the British burned it. The reconstruction, including the addition of two porticos, was again in charge of James Hoban, and involved an expense of $301,496.25. The style of the White House is also Italian Renaissance, and does not compare unfavorably with similar edifices erected in the Old World at the same time.

Architect Robert Mills of Charleston, S.C., was engaged by President Jackson in 1830, for the government buildings of the capital. He was a pupil of James Hoban. Besides his connection with the public works in Washington, Mills has built the Monument Church in Richmond, the State Capitol at Harrisburg, the Philadelphia Mint, etc.

A building for the Treasury Department was originally erected by Hadfield between 1794 and 1799. In 1801 a fire swept part of it off. The British burned the whole building during the invasion of 1814. It was commenced anew in 1817, finished in 1823, and destroyed again by fire on March 29, 1833. In 1835 Robert Mills was appointed as the first architect of the Treasury Building as it now stands; he designed and erected the fire-proof columniated east wing. In 1855 plans for a hollow square, of which the east front already built should form one side, were taken up.

The designs of Architect Thomas U. Walter were adopted, and placed in the hands of the officials of the Treasury Department for execution.

Before the year 1850 the United States had but few and insignificant buildings of its own erected outside of the great seaports. Its customs-offices, post-offices, and court-houses were kept in rented or purchased buildings of entirely inadequate accommodations.

A general demand for new buildings sprang up; yet there was no legislative authority for the employment of architects. Ammi B. Young had designed, and had been in charge of the erection of, the Boston Custom House, a building in which the ambition of his life culminated. He was appointed to a fifteen hundred dollar clerkship, was set to work planning custom-houses, post-offices, court-houses, mints, marine hospitals, etc.; and from this humble beginning a bureau grew up rapidly which has controlled an annual expenditure of many millions on public buildings.

Under Young, the south front of the Treasury was completed in 1860, and the west front commenced. A massive facing of granite from Dix's Island in Maine was adopted for both instead of the porous sandstone used on the east wing. The west wing of the Treasury was finished in 1864 by Isaiah Rodgers of Cincinnati, the architect of the Astor House in New York, who succeeded Mr. Young as supervising architect. The fourth or north front of the Treasury Department was completed in 1870 under A. B. Mullett, the successor in office of Rodgers.

The style of the Treasury Building is purely classic, and based upon an enlargement of the Ionic columns and capitals of the Erechtheum in Athens as the æsthetical element. The cost of the completed fire-proof building, the extreme dimensions of which are 264 feet by 468 feet, has has been about $7,000,000.

On the site of the south wing of the present General Post-Office, there stood Blodget's Hotel. It was bought by the Government in the year 1810, arranged for post-offices and for Patent Office, and in the year 1836 was consumed by fire. W. F. Elliot of Washington made the plans for the south wing of the present Patent Office Building, the construction of which was in charge of Robert Mills, who was displaced in 1851 by Thomas U. Walter, who revised the plans thoroughly, and put

Edward Clark in charge of the building operations. This gentleman completed, about the year 1867, the whole fire-proof building, which forms a hollow square of about 330 feet by 450 feet in size, and three stories high.

The south front is faced with Aquia Creek sandstone, and the three later wings with Maryland marble. The portico in the centre of the south front is copied from the Parthenon at Athens; and from this purely classic motive the design of the whole complex mass is developed, an imposing mass in a valuable and pleasing material. The cost was $2,700,000.

Of the present General Post-Office Building, the south wing was commenced in the year 1839, and completed after designs and in charge of Robert Mills. The three other wings completing a hollow square were commenced in 1855, and finished in 1866, according to the plans of Thomas U. Walter; the work being executed under the superintendence of officers of the Engineer Corps, assisted by Edward Clark. Its style leans to the palace architecture of Italy in the *cinquecento*, and more especially to compositions of Palladio. The extreme dimensions of the building are 300 by 200 feet; it contains a finished basement and three stories, and cost nearly $1,900,000.

Next in chronological order a smaller department-building and conservatories, for the use of the Department of Agriculture, were designed and erected by Adolf Cluss of Washington, in the years 1867 to 1869. The material for the main building is pressed brick, with brown stone base and wrought work. The style leans to French Renaissance with mansard roof. The conservatories are kept in light Moresque forms. The expense involved was about $175,000.

The State Department used to occupy a plain structure at the north-east corner of the present Treasury Building, to the extension of which it had to give way. In 1869 it was concluded to build a hollow square to the west of the President's House, corresponding in size with the Treasury Building, which stands to the east of it. The combustible buildings on the site, now occupied by the War and Navy Departments, are to be razed, and a large new building is to accommodate all the three departments spoken of. A competition for designs was instituted, and a Philadelphian obtained the first prize. In 1872, however, other designs prepared under A. B. Mullett were adopted. In these the conditions prescribed for the competition were set aside; and up to date $5,000,000 have been appropriated for the work. The south wing has been completed, and the walls of the east wing are partly up. The façades of the building are designed in the rich forms of Italian Renaissance, with superincumbent Doric orders for each of the three stories, raised upon a rusticated entrance story. The cut-stone fronts are uniformly wrought in unpolished gray granite. A system of portly mansard roofs is used for covering in this building. Since Mullett's retirement the work has been transferred to the Secretary of War, and by him placed in charge of Orville E. Babcock, an engineer-officer of the army.

Having completed the review of the principal Government buildings, we come to the Smithsonian Building, which occupies a position akin to a Government building. Mr. James Renwick of New York was selected as architect, after a competition for designs in the year 1846; and he erected a building of red sandstone, in mediæval style, at a cost of about $325,000. Not being fire-proof, a conflagration consumed a large part of it in the winter of 1865, after which it was reconstructed and the major part of it fire-proofed under Adolf Cluss, at an expenditure of about $130,000.

Along with these public buildings, a notice is due to the building of the Corcoran Gallery of Art, erected for public use, by W. W. Corcoran, a public-spirited millionnaire. This home of art was erected in French Renaissance from designs of James Renwick, of New York. It has fronts of pressed brick work, with red sandstone wrought work, and cost about $200,000.

The municipal authorities of Washington had the City Hall designed by George Hadfield, who began its erection in 1820. It was finished by others in 1849, and has been sold lately to the General Government for the use of the courts. The local government now maintains its dignity in rented dwellings.

The local government owns a number of fine large school buildings, which were rewarded by a medal of merit for "Progress in School Architecture," at the Vienna International Exhibition. They are the work of Adolf Cluss.

Among public institutions owned by private corporations, must be mentioned the buildings of the Howard University, on the confines of the city. They were erected between the years 1866 and 1871, and are the work of Henry R. Searle of Washington. They involved an expense of $300,000, and were erected of a concrete stone called "the American building block." A pleasing effect in a plain modern architecture is reached by alternating the color of the blocks.

The Louise Home, an asylum for worthy aged females, due to the generosity of W. W. Corcoran, was erected about the year 1870, under E. G. Lind, the architect of the Peabody Institute in Baltimore, in chaste modern architecture, at a cost of $200,000.

The Masonic Temple was erected in the years 1867 to 1869, in French Renaissance, under Adolf Cluss. It has a granite entrance story; above there are ashlared fronts of Connecticut brown stone with heavy Nova Scotia sandstone wrought work. It cost about $180,000. A mansard roof remains unfinished for want of funds.

The church architecture, as well as the private architecture of the city, had lain dormant until the outbreak of the late war, before which time noteworthy improvement of these classes were only sporadic.

Some of the new work, contributed by a number of conscientious and able practitioners, compares favorably with that of other cities; but since the review of the Government buildings, which form the prominent architectural feature of Washington, has taxed the patience of the convention too long already, this part cannot be enlarged upon at the present occasion.

The Washington National Monument, which has been the stumbling-block of the century, must finally be alluded to. Its agonies are of long standing.

On Aug. 7, 1783, the Continental Congress resolved on the erection of an equestrian statue of Gen. Washington at the future capital, and futile efforts were made from time to time to make good this resolve. At length prominent citizens, headed by Chief Justice Marshall, formed in 1833 a voluntary association, and invoked the people of the country to assist them in redeeming the plighted faith of their representatives. In 1845 they obtained from Robert Mills a design for a monument composed of a circular colonnaded Doric building 250 feet in diameter, and 100 feet high, from which starts an obelisk-shaped shaft 55 feet square at the base, and 600 feet high above the foundations. The estimate of cost was $1,120,000. This design was signed by the President of the United States and other public men, lithographed, and circulated in large editions, as a diploma to the contributors. In 1847 a net sum of $87,000 had been turned in from the collections, and the work on the shaft was commenced. The corner-stone was laid with imposing public ceremonies, on July 4, 1848. In 1855 the shaft had been raised 174 feet, and $230,000 had been spent, which exhausted the funds of the association. On Feb. 22, 1855, a special committee of Congress recommended an appropriation of $200,000, to aid the funds of the society. About that time, the Pope of Rome, responding to the broad invitation sent throughout the world, had like many other potentates, states, towns, and societies, sent a valuable contribution block. This displeased a powerful political organization of that time so much that one night they broke into the shed, and smashed the block into atoms. They followed up this action by taking violent possession of the monument, the office, and papers, and held on to them until October, 1858. For these three years no more work was done, and no collections were turned in. To pre-

vent a repetition of such scenes, the survivors of the original movers organized under a charter from Congress on Feb. 26, 1859; but the long period of inactivity had chilled public and private sympathy, and destroyed confidence in the ultimate success of the undertaking, so that since twenty-one years not a stone has been cut or set, nor any thing done to relieve the monotony of the faithful watchman's weary hours.

On Jan. 13, 1874, the House of Representatives had another fit, and ordered the old sore to be doctored once more by a committee of thirteen. The committee procured from the Corps of Engineers of the army a recommendation to do away with the colonnaded structure, and to decrease the altitude of the shaft to 438 feet.

The Committee of the House recommended the completion of the monument according to the plan edited by the lieutenant with the scissors, and advocated a sufficient appropriation to have it done before July 4, 1876. With this good intention on record, the movement stopped once more. But on Aug. 2, 1876, Congress appropriated, without much discussion, $200,000 "to continue the construction of the Washington Monument." The work is to proceed under a committee, of which the Architect of the Treasury, the Architect of the Capitol, and the Chief of Engineers, U. S. A., are the expert members. An examination was prescribed to be made as to the sufficiency of the foundation, prior to commencing any work; and in case of an adverse decision, the appropriation would become null and void. At the solicitation of the committee, a board of three generals of engineers have been assigned, and are now engaged upon the duties of the new inquiry.

On July 17, 1876, was filed under the United States copyright laws "A Revised Plan of the Monument." This is a new modification of the military modification of 1874. It is claimed that the appropriation has reference to this apocryphal compound. The wording of the late act appears to bind the committee to whatever plan it had reference to, after it has been satisfied of the sufficiency of the foundation.

The naked stack they are now attempting to erect is made plausible to the general public by calling it an obelisk. Hence it is proper to state what constitutes an obelisk in the art-historian's meaning of the word, and the rank occupied by such structures in the annals of architecture.

The oldest and most colossal monuments of the earth, the solid cut-stone pyramids of Lower Egypt, are believed to have been erected about 3000 B.C. They were faced with polished granite, bearing inscriptions, on their outside as well as within their gorgeous chambers, and do not represent the beginning, but rather the culminating point of perfection, of the art of old Egypt.

The hieratic monarchical Egypt of the Pharaohs, beyond which the trace of history does not reach, rests upon the dust of a much older social organization, the national life of which, for countless ages, bore a cheerful countenance in striking contrast with the official mask of royal Egypt and its rigid conventionalism. It had developed a free art, reminiscences of which are found in the pleasant pictures from public and family life decorating the grottos, contemporaneous with the pyramids. Herodotus wrote, "The Egyptians are in their customs and laws the very opposite of all other nations." The father of history had followed all other nations under his observation from infancy through a period of rise to a culminating point of perfection, which was followed by a state of lingering decline; but in Egypt he was confronted with and puzzled by a people which at the very gates of history was already in a state of decline, so that modern Owen Jones writes, "The more ancient the monuments of Egypt, the more perfect is the art. All the remains with which we are acquainted exhibit the art in a state of decline which is doubtless inferior to the unknown perfection, but still far beyond what followed after." During the earlier period of the so-called "old empire" of Egypt (first to twelfth dynasty, 3000–2000 years B.C.), only small-sized obelisks, from two to ten feet high, are traced; they were used for sepulchral purposes. The lofty, characteristically developed forms first appeared under the twelfth dynasty, which was followed by a contempt of art during the conquest of Egypt by the nomadic Hyksos. With the reinstatement of national sovereignty under the seventeenth dynasty, the art revived, in an age of conquests, prosperity, and luxury. It was soon inflated and weighed down by overdone ornamentation and lifeless conventionalism. Colossal sitting statues of kings and gods were placed in pairs in front of the traditional pylons flanking the propylæ of the temples; re-enforced by obelisks which in turn were set in front of these statues. The era of obelisks dawned: it culminated under the nineteenth dynasty (1600–1400 years B.C.). Pliny describes an obelisk set by Rameses Memnon Osymandyas, the Napoleon of ancient Egypt (1600 B.C.). It was 120 cubits (about 150 feet) in height, and thousands of men were employed on it. Rameses, apprehensive that the workmen might give out while raising the monster block, tied his son at the last moment to its upper end, so as to have the obelisk guaranteed by the increased care for the endangered life of the heir-apparent. These historical obelisks were mostly rose-colored, quadrangular, granitic monoliths of exquisite workmanship, from the quarries near Syena in Upper Egypt. They were from 50 to 150 feet high, diminishing gradually until they terminated near the top in a four-sided pyramid, termed pyramidion. The width of the base ranged between one-tenth to one-thirteenth of the height to the base of the pyramidion. The sides of the obelisks were polished, and served to form huge tablets. On these tablets hieroglyphics were sculptured in *relief en creux*, i.e., worked in relief upon a sunk ground. They were to record facts, and to serve also as architectural decorations, by perpetuating for all time in a descriptive and illustrative style the glorious deeds of the founders of the palaces and temples. The obelisks were carved after they were set in place: hence some of them have remained plain, i.e., unfinished. The hieroglyphics were finished in polychrome throughout, mostly in the primitive colors, — yellow, red, and blue. Thus decorated, the obelisks appeared as if wrapped up in carpets of rich Oriental patterns. This was no doubt a reminiscence of early times when the Egyptians decorated the wooden posts of their primitive temples by tying their native flowers around them.

Religious laws forbade a change, after such a form of decoration had once become sacred; and this was the reason that the nightmare of conventionalism haunted free art, and that color, the true function of which is to *adorn*, was made to *speak* besides. The upper part of the pyramidion was gilded, and the whole surface of the obelisks coated with a most efficient preserving silicate.

The obelisks were generally set on slightly projecting plain low plinths, which gave an unsatisfactory effect. It was increased by arranging the hieroglyphics symmetrically, setting them close and thick at the top and bottom of the sides, and more open in the intermediate space, so as to produce the general impression of a base, shaft, and capitulum.

When Cambyses, King of Persia, conquered Egypt (under the 26th dynasty, 525 B. C.), he felled to the ground all the obelisks of Lower and Middle Egypt, sparing but one at Heliopolis, the size, proportions, and harmonious coloring of which struck him with awe. Its colors have bleached; but after more than twenty-four hundred years, it still stands erect near the village Maturiah, and defies the destructive elements amidst a world of historic rubbish, in which the archæologist delights to scratch. The lofty monoliths are now found buried under the deposits of the Nile and the sand of the desert. They designate the lost sites of the ancient cities, and the immense architectural activity of a time, the very records and alphabet of which have been lost by

the burning of the Alexandrian Library under Cæsar, and the destruction of what was saved, by the fanatical mob of Bishop Theophilus under Emperor Theodosius. These accidents account for the conflicting statements of modern authors, which have been gradually reconciled, after an old Grecian translation made by Hermapion, an Egyptian priest, had been positively traced as referring to the hieroglyphics on the Flaminian obelisk in Rome. The merit of the important discovery of the lost key is partly due to Prof. Scyfforth, the Egyptiograph, now residing in New York.

After the conquest of Egypt by the Romans (48 B.C.), Augustus and his successors drained the valley of the Nile, and the tombs hewn out of its mountains, of whatever was portable, for the gaze of imperial Rome, — of sarcophagi, urns, furniture, mummies of princes and priests, and of obelisks, — those mummies of a congealed civilization. Twelve or more of these obelisks were shipped to Rome, and one to Constantinople. The architectural tact of Rome provided for the mounting of the re-erected obelisks upon more or less elaborate high pedestals. This was found necessary, since the flatly carved hieroglyphics, deprived of their polychromatic adornment, failed to enliven the large granite surfaces. The obelisks were exhibited upon those Roman pedestals until the overthrow of the Roman empire by the barbarians (sixth century A.D.). These upset them a second time, and broke several of them in pieces by the fall. After having been buried in rubbish and ashes for another thousand years, the Popes Pius V. and Sixtus V. (1566, 1590, A.D.) had them excavated once more, patched, set up anew in good taste by the artists and engineers of the Italian Renaissance period, and had them shaped so as to have the pyramidions terminate in huge gilded crosses. The obelisk on the Monte Cavallo (Quirinalis) was placed in the centre of artistic equestrian groups, and set upon a pedestal about thirty-six feet high above ground.

In 1820 the English shipped one of the obelisks, formerly decorating the propyla of the palace of Luxor, near Thebes, and raised it on Waterloo Place. In 1831 Mehemet Ali presented its twin to the French Government, who mounted it appropriately in the Place de la Concorde at Paris. Both monoliths are exhibited in the open air, just as are scores of mummies within the British Museum and the Louvre.

It is not surprising that these quaint, homeless monster blocks, roughly knocked about for thousands of years, should have excited curiosity and interest. By their re-erection in prominent places they have become more familiar to the average citizen than the antique art-treasures, hid away in the museums. But an unpardonable anachronism would be committed by copying even a *bona-fide* obelisk for the present purpose. An inscribed pillar detached from the palaces of the Pharaohs would be a most improper form for perpetuating the civil and military virtues of George Washington, one of the most humane of men. Architecture is defined as the material expression of the wants, faculties, and sentiments of its age. Formal types and symbols, primarily the common property of groups of nations, have been gradually transformed and perfected in the onward march of civilization; and a return to the unarticulated mode of expression resorted to in the earliest stages of society would be a declaration of bankruptcy on the part of the taste of the age.

It is still less justifiable to construct an unsightly huge pile of masonry faced with scaling cut stone, to palm it upon the public as an obelisk, simply because geometrical outlines have been copied off-hand, and finally to claim credit for surpassing the size of the original. But this is being done with the National Washington Monument, by far the most pretentious structure of the kind on the continent. The effort is not even original. When an Asiatic despotism was established on the banks of the Euphrates, which outshone the glories of the Egyptian Pharaohs, a monument was resolved upon which should likewise surpass the pyramids of Egypt, "a tower whose top may reach unto heaven" (Gen. xi.). This is the noted Tower of Babel, the ruins of which have been lately identified on the western banks of the Euphrates. Herodotus, an eye-witness, describes it as a pyramid of 600 feet in height, reared in steps upon a base of 600 feet square. The apex was crowned by a large temple furnished with a golden table and sleeping-accommodations for the god Belus. By the side of the rival imitation in Babylon, we cannot even brag of outdoing the original pyramid of Cheops at Ghizeh, since solids are compared by cubic contents, and not simply by the one factor of height. That pyramid contains 90,000,000 cubic feet of masonry, against less than 700,000 cubic feet in the modified monument.

The former difficulties of moving heavy monoliths are hardly reckoned at present. The heaviest obelisk weighed about 3,000,000 pounds. The granite base of the monument of Peter the Great, in St. Petersburg, is 42 feet in length, 36 feet in width, and 21 feet in height; it weighs about 5,500,000 pounds. The great granite vase in front of the Berlin Museum has 22 feet diameter, was worked out of a block 26 by 25 by 27 feet in size, weighing 2,750,000 pounds, and in its finished artistic form, still weighs 150,000 pounds.

The print of the Washington Monument, now being officially circulated, even undertakes to show off in profile, by way of comparison, the heights of the apexes of various renowned structures, such as St. Peter's in Rome, St. Stephen's in Vienna, St. Paul's in London, the Cathedral of Strasburg, etc., in order to prove also superiority in this respect. This is probably the first time that any one to whom has been confided the shaping of a great national monument has undertaken to discard quality, and in earnest to compare by the surveyor's pole the work of artistic genius with a pile of stone. To admit that the present plans represent a monumental obelisk, is equal to mistaking an artist's easel with a blank canvas for a finished work of art. For many years the design of the monument has been condemned by the well-nigh unanimous verdict of the art-critics, the profession, and of the amateurs of cultivated taste, of this country and elsewhere; but their overwhelming grounds of objection have never before been presented in concise form: hence these lengthy remarks. The view has prevailed among the worthy and enthusiastic gentlemen of the Monument Society, that thousands of dollars having been contributed towards the monument as printed and vouched for on the old diplomas, it would be bad faith and even sacrilegious to tear it down, and substitute forms worthily perpetuating the great man and the standard of monumental art, instead of being a stigma upon the era of its erection. Public opinion is being appeased by the explanation that by tabooing the strained effort toward a mausoleum, the chastity of the primitive Egyptian style is vindicated.

The adornment of the uncouth form of the plain truncated pyramid is demanded by modern culture, even where it is born of plain regard for stability, as with the stacks of factories. It is a strange confusion of ideas to claim this mere skeleton-form as the prototype of the polished Oriental monoliths of exquisite material and unsurpassed workmanship, the polychromatic ornamentation of which spoke in ideographic letters the history of a prosaic and persistent people, who in art matters and construction were autodidacts in the strictest sense of the word.

The design of the monument was adopted at a time when, with the exception of a few public buildings, the cities of the continent from Maine to Texas consisted of brick and frame houses of materially the same strictly utilitarian hap-hazard character. Hence the reverence for the noble object, which should not be confounded with the awkward mode of expressing it, resorted to at a time before the national taste had any development at all.